



6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298  
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944  
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313  
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260  
E-Mail: lab@traceanalysis.com

## Certifications

**WBENC:** 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657  
**NCTRCA** WFWB38444Y0909

## NELAP Certifications

**Lubbock:** T104704219-08-TX **El Paso:** T104704221-08-TX **Midland:** T104704392-08-TX  
LELAP-02003 LELAP-02002  
Kansas E-10317

## Analytical and Quality Control Report

Brad Davis  
Zia Engineering & Environmental  
755 S. Telshor Blvd.  
Suite F-201  
Las Cruces, NM, 88011

Report Date: October 1, 2009

Work Order: 9090320



Project Name: HELSTF Diesel Spill Groundwater

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
209098	HLSF-0154-DRW-016-0909	water	2009-09-01	13:35	2009-09-02

### Comment(s)

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 80 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

### Notes:

*For inorganic analyses, the term MQL should actually read PQL.*

**Standard Flags**

- U** - Not detected. The analyte is not detected above the SDL.
- J** - Estimated. The analyte is positively identified and the value is approximated between the SDL and MQL.
- B** - The sample contains less than ten times the concentration found in the method blank.
- JB** - The analyte is positively identified and the value is approximated between the SDL and MQL.  
The sample contains less than ten times the concentration found in the method blank.  
The result should be considered non-detect to the SDL.



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Dr. Blair Leftwich, Director  
Dr. Michael Abel, Project Manager

## Case Narrative

Samples for project HELSTF Diesel Spill Groundwater were received by TraceAnalysis, Inc. on 2009-09-02 and assigned to work order 9090320. Samples for work order 9090320 were received intact without headspace and at a temperature of 5.0 deg. C & 19.0 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Ag, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at 12:57
Alkalinity	SM 2320B	54231	2009-09-10 at 11:00	63527	2009-09-10 at 11:00
Al, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at 12:57
Ammonia	SM 4500-NH3 B,C	54092	2009-09-05 at 16:00	63370	2009-09-05 at 17:00
As, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at 12:57
Ba, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at 12:57
Be, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at 12:57
Bromide (IC)	E 300.0	54366	2009-09-03 at 20:48	63677	2009-09-03 at 20:48
Ca, Total	S 6010B	54079	2009-09-09 at 09:16	63545	2009-09-15 at 08:54
Cd, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at 12:57
Chloride (IC)	E 300.0	54366	2009-09-03 at 20:48	63677	2009-09-03 at 20:48
Chromium, Hexavalent	SM 3500-Cr B	54057	2009-09-02 at 09:46	63330	2009-09-02 at 09:46
Co, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at 12:57
Cr, Dissolved	S 6010B	54154	2009-09-11 at 08:26	63462	2009-09-11 at 11:56
Cr, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at 12:57
Cu, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at 12:57
Explosives (8330)	S 8330-C18	54137	2009-09-04 at 15:00	63425	2009-09-10 at 15:30
Fe, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at 12:57
Fluoride (IC)	E 300.0	54363	2009-09-16 at 13:48	63674	2009-09-16 at 13:48
Hg, Total	S 7470A	54009	2009-09-04 at 13:00	63280	2009-09-04 at 14:18
K, Total	S 6010B	54079	2009-09-09 at 09:16	63545	2009-09-15 at 08:54
Mg, Total	S 6010B	54079	2009-09-09 at 09:16	63545	2009-09-15 at 08:54
Mn, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at 12:57
Mo, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at 12:57
Na, Total	S 6010B	54079	2009-09-09 at 09:16	63545	2009-09-15 at 08:54
Ni, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at 12:57
Nitrate and Nitrite as N	SM 4500-NO3 E	54370	2009-09-17 at 09:43	63681	2009-09-17 at 15:44
O/G	E 1664	54129	2009-09-08 at 09:15	63411	2009-09-09 at 11:48
Pb, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at 12:57
pH	SM 4500-H+	54064	2009-09-02 at 12:00	63341	2009-09-02 at 12:00
P, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at 12:57
Sb, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at 12:57
Semivolatiles	S 8270C	54112	2009-09-08 at 15:00	63393	2009-09-10 at 07:56
Se, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at 12:57
SO4 (IC)	E 300.0	54366	2009-09-03 at 20:48	63677	2009-09-03 at 20:48
TDS	SM 2540C	54173	2009-09-03 at 14:20	63473	2009-09-03 at 14:20
TKN	E 351.3	54150	2009-09-09 at 11:15	63441	2009-09-09 at 15:00
Tl, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at 12:57
TOC	SM 5310C	54367	2009-09-17 at 15:01	63678	2009-09-17 at 15:01
Total Cyanide	SM 4500-CN C,E	54106	2009-09-07 at 16:00	63391	2009-09-07 at 17:45
TPH DRO	Mod. 8015B	54035	2009-09-04 at 15:00	63307	2009-09-07 at 18:00

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
TPH GRO	S 8015B	53976	2009-09-03 at 14:48	63239	2009-09-03 at 14:48
V, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at 12:57
Zn, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at 12:57

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9090320 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

## Analytical Report

### Sample: 209098 - HLSF-0154-DRW-016-0909

Laboratory: Lubbock  
 Analysis: Ag, Total Analytical Method: S 6010B Prep Method: S 3010A  
 QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR  
 Prep Batch: 54079 Sample Preparation: 2009-09-09 Prepared By: KV

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver	U	<0.00111	<0.00500	<0.00111	mg/L	1	0.00111	0.005	0.00111

### Sample: 209098 - HLSF-0154-DRW-016-0909

Laboratory: Lubbock  
 Analysis: Al, Total Analytical Method: S 6010B Prep Method: S 3010A  
 QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR  
 Prep Batch: 54079 Sample Preparation: 2009-09-09 Prepared By: KV

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Aluminum		<b>0.0930</b>	<b>0.0930</b>	<0.00301	mg/L	1	0.00301	0.05	0.00301

### Sample: 209098 - HLSF-0154-DRW-016-0909

Laboratory: El Paso  
 Analysis: Alkalinity Analytical Method: SM 2320B Prep Method: N/A  
 QC Batch: 63527 Date Analyzed: 2009-09-10 Analyzed By: JG  
 Prep Batch: 54231 Sample Preparation: Prepared By: JG

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hydroxide Alkalinity	U	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Carbonate Alkalinity	U	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Bicarbonate Alkalinity		<b>204</b>	<b>204</b>	<4.00	mg/L as CaCo3	1	4.00	4	4
Total Alkalinity		<b>204</b>	<b>204</b>	<4.00	mg/L as CaCo3	1	4.00	4	4

### Sample: 209098 - HLSF-0154-DRW-016-0909

Laboratory: Lubbock  
 Analysis: Ammonia Analytical Method: SM 4500-NH3 B,C Prep Method: N/A  
 QC Batch: 63370 Date Analyzed: 2009-09-05 Analyzed By: AH  
 Prep Batch: 54092 Sample Preparation: 2009-09-05 Prepared By: AH

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Ammonia-N	J	<b>0.616</b>	<1.00	<0.353	mg/L	1	0.353	1	0.353

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock

Analysis: As, Total

Analytical Method: S 6010B

Prep Method: S 3010A

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Prep Batch: 54079

Sample Preparation: 2009-09-09

Prepared By: KV

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Arsenic		<b>0.0950</b>	<b>0.0950</b>	<0.00448	mg/L	1	0.00448	0.01	0.00448

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock

Analysis: Ba, Total

Analytical Method: S 6010B

Prep Method: S 3010A

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Prep Batch: 54079

Sample Preparation: 2009-09-09

Prepared By: KV

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Barium		<b>0.00700</b>	<b>0.00700</b>	<0.00105	mg/L	1	0.00105	0.005	0.00105

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock

Analysis: Be, Total

Analytical Method: S 6010B

Prep Method: S 3010A

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Prep Batch: 54079

Sample Preparation: 2009-09-09

Prepared By: KV

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Beryllium	U	<0.000450	<0.00200	<0.000450	mg/L	1	0.000450	0.002	0.00045

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: El Paso

Analysis: Bromide (IC)

Analytical Method: E 300.0

Prep Method: N/A

QC Batch: 63677 Date Analyzed: 2009-09-03 Analyzed By: JR  
 Prep Batch: 54366 Sample Preparation: 2009-09-03 Prepared By: JR

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Bromide	U	<0.197	<1.35	<0.197	mg/L	5	0.197	0.27	0.0394

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock  
 Analysis: Ca, Total Analytical Method: S 6010B Prep Method: S 3010A  
 QC Batch: 63545 Date Analyzed: 2009-09-15 Analyzed By: RR  
 Prep Batch: 54079 Sample Preparation: 2009-09-09 Prepared By: KV

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Calcium		517	517	<1.17	mg/L	10	1.17	1	0.117

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock  
 Analysis: Cd, Total Analytical Method: S 6010B Prep Method: S 3010A  
 QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR  
 Prep Batch: 54079 Sample Preparation: 2009-09-09 Prepared By: KV

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Cadmium	U	<0.000303	<0.00200	<0.000303	mg/L	1	0.000303	0.002	0.000303

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: El Paso  
 Analysis: Chloride (IC) Analytical Method: E 300.0 Prep Method: N/A  
 QC Batch: 63677 Date Analyzed: 2009-09-03 Analyzed By: JR  
 Prep Batch: 54366 Sample Preparation: 2009-09-03 Prepared By: JR

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		2200	2200	<64.0	mg/L	100	64.0	1.22	0.6404

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory:	El Paso	Analytical Method:	SM 3500-Cr B	Prep Method:	N/A
Analysis:	Chromium, Hexavalent	Date Analyzed:	2009-09-02	Analyzed By:	MD
QC Batch:	63330	Sample Preparation:	2009-09-02	Prepared By:	JR
Prep Batch:	54057				

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hexavalent Chromium		<b>0.452</b>	<b>0.452</b>	<0.00594	mg/L	1	0.00594	0.01	0.00594

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory:	Lubbock	Analytical Method:	S 6010B	Prep Method:	S 3010A
Analysis:	Co, Total	Date Analyzed:	2009-09-09	Analyzed By:	RR
QC Batch:	63374	Sample Preparation:	2009-09-09	Prepared By:	KV
Prep Batch:	54079				

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Cobalt	J	<b>0.00100</b>	<0.00200	<0.000822	mg/L	1	0.000822	0.002	0.000822

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory:	Lubbock	Analytical Method:	S 6010B	Prep Method:	S 3005A
Analysis:	Cr, Dissolved	Date Analyzed:	2009-09-11	Analyzed By:	RR
QC Batch:	63462	Sample Preparation:	2009-09-11	Prepared By:	KV
Prep Batch:	54154				

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Chromium		<b>0.434</b>	<b>0.434</b>	<0.000583	mg/L	1	0.000583	0.001	0.000583

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory:	Lubbock	Analytical Method:	S 6010B	Prep Method:	S 3010A
Analysis:	Cr, Total	Date Analyzed:	2009-09-09	Analyzed By:	RR
QC Batch:	63374	Sample Preparation:	2009-09-09	Prepared By:	KV
Prep Batch:	54079				

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Chromium		<b>4.65</b>	<b>4.65</b>	<0.000583	mg/L	1	0.000583	0.005	0.000583



**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock

Analysis: Cu, Total

QC Batch: 63374

Prep Batch: 54079

Analytical Method: S 6010B

Date Analyzed: 2009-09-09

Sample Preparation: 2009-09-09

Prep Method: S 3010A

Analyzed By: RR

Prepared By: KV

Parameter	Flag	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Total Copper		0.0190	0.0190	<0.000843	mg/L	1	0.000843	0.005	0.000843

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock

Analysis: Explosives (8330)

QC Batch: 63425

Prep Batch: 54137

Analytical Method: S 8330-C18

Date Analyzed: 2009-09-10

Sample Preparation: 2009-09-04

Prep Method: S 3535A

Analyzed By: DS

Prepared By: DS

Parameter	Flag	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
HMX	U	<0.123	<0.500	<0.123	µg/L	1	0.123	0.5	0.123
RDX	U	<0.298	<0.500	<0.298	µg/L	1	0.298	0.5	0.298
1,3,5-Trinitrobenzene	U	<0.339	<0.500	<0.339	µg/L	1	0.339	0.5	0.339
1,3-Dinitrobenzene	U	<0.389	<0.500	<0.389	µg/L	1	0.389	0.5	0.389
Nitrobenzene	U	<0.379	<0.500	<0.379	µg/L	1	0.379	0.5	0.379
Tetryl	U	<0.413	<0.500	<0.413	µg/L	1	0.413	0.5	0.413
TNT	U	<0.464	<0.500	<0.464	µg/L	1	0.464	0.5	0.464
4-Amino-DNT	U	<0.319	<0.500	<0.319	µg/L	1	0.319	0.5	0.319
2-Amino-DNT	U	<0.391	<0.500	<0.391	µg/L	1	0.391	0.5	0.391
2,6-DNT	U	<0.323	<0.500	<0.323	µg/L	1	0.323	0.5	0.323
2,4-DNT	U	<0.366	<0.500	<0.366	µg/L	1	0.366	0.5	0.366
2-NT	U	<0.379	<0.500	<0.379	µg/L	1	0.379	0.5	0.379
4-NT	U	<0.398	<0.500	<0.398	µg/L	1	0.398	0.5	0.398
3-NT	U	<0.346	<0.500	<0.346	µg/L	1	0.346	0.5	0.346

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
1,2-Dinitrobenzene		1.71	µg/L	1	2.50	68	19.8 - 160

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock

Analysis: Fe, Total

QC Batch: 63374

Prep Batch: 54079

Analytical Method: S 6010B

Date Analyzed: 2009-09-09

Sample Preparation: 2009-09-09

Prep Method: S 3010A

Analyzed By: RR

Prepared By: KV

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Iron		<b>9.88</b>	<b>9.88</b>	<0.000872	mg/L	1	0.000872	0.01	0.000872

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: El Paso

Analysis: Fluoride (IC)

Analytical Method: E 300.0

Prep Method: N/A

QC Batch: 63674

Date Analyzed: 2009-09-16

Analyzed By: JR

Prep Batch: 54363

Sample Preparation: 2009-09-16

Prepared By: JR

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Fluoride	U	<0.217	<0.850	<0.217	mg/L	5	0.217	0.17	0.0434

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock

Analysis: Hg, Total

Analytical Method: S 7470A

Prep Method: N/A

QC Batch: 63280

Date Analyzed: 2009-09-04

Analyzed By: TP

Prep Batch: 54009

Sample Preparation: 2009-09-04

Prepared By: TP

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Mercury	U	<0.0000329	<0.000200	<0.0000329	mg/L	1	0.0000329	0.0002	3.29e-05

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock

Analysis: K, Total

Analytical Method: S 6010B

Prep Method: S 3010A

QC Batch: 63545

Date Analyzed: 2009-09-15

Analyzed By: RR

Prep Batch: 54079

Sample Preparation: 2009-09-09

Prepared By: KV

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Potassium		<b>114</b>	<b>114</b>	<1.72	mg/L	10	1.72	1	0.172

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock

Analysis: Mg, Total

Analytical Method: S 6010B

Prep Method: S 3010A

QC Batch: 63545  
Prep Batch: 54079Date Analyzed: 2009-09-15  
Sample Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Magnesium		805	805	<1.60	mg/L	10	1.60	1	0.16

**Sample: 209098 - HLSF-0154-DRW-016-0909**Laboratory: Lubbock  
Analysis: Mn, Total  
QC Batch: 63374  
Prep Batch: 54079Analytical Method: S 6010B  
Date Analyzed: 2009-09-09  
Sample Preparation: 2009-09-09Prep Method: S 3010A  
Analyzed By: RR  
Prepared By: KV

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Manganese		0.00700	0.00700	<0.000305	mg/L	1	0.000305	0.0025	0.000305

**Sample: 209098 - HLSF-0154-DRW-016-0909**Laboratory: Lubbock  
Analysis: Mo, Total  
QC Batch: 63374  
Prep Batch: 54079Analytical Method: S 6010B  
Date Analyzed: 2009-09-09  
Sample Preparation: 2009-09-09Prep Method: S 3010A  
Analyzed By: RR  
Prepared By: KV

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Molybdenum		0.0320	0.0320	<0.00119	mg/L	1	0.00119	0.01	0.00119

**Sample: 209098 - HLSF-0154-DRW-016-0909**Laboratory: Lubbock  
Analysis: Na, Total  
QC Batch: 63545  
Prep Batch: 54079Analytical Method: S 6010B  
Date Analyzed: 2009-09-15  
Sample Preparation: 2009-09-09Prep Method: S 3010A  
Analyzed By: RR  
Prepared By: KV

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Sodium		2640	2640	<5.00	mg/L	100	5.00	1	0.05

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory:	Lubbock		
Analysis:	Ni, Total	Analytical Method:	S 6010B
QC Batch:	63374	Date Analyzed:	2009-09-09
Prep Batch:	54079	Sample Preparation:	2009-09-09
		Prep Method:	S 3010A
		Analyzed By:	RR
		Prepared By:	KV

Parameter	Flag	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Total Nickel		<b>0.102</b>	<b>0.102</b>	<0.00121	mg/L	1	0.00121	0.005	0.00121

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory:	Lubbock		
Analysis:	Nitrate and Nitrite as N	Analytical Method:	SM 4500-NO3 E
QC Batch:	63681	Date Analyzed:	2009-09-17
Prep Batch:	54370	Sample Preparation:	2009-09-17
		Prep Method:	N/A
		Analyzed By:	KV
		Prepared By:	KV

Parameter	Flag	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Nitrate and Nitrite as N		<b>115</b>	<b>115</b>	<7.00	mg/L	200	7.00	0.1	0.035

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory:	El Paso		
Analysis:	O/G	Analytical Method:	E 1664
QC Batch:	63411	Date Analyzed:	2009-09-09
Prep Batch:	54129	Sample Preparation:	2009-09-08
		Prep Method:	N/A
		Analyzed By:	MD
		Prepared By:	MD

Parameter	Flag	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Oil and Grease	U	<3.60	<5.00	<3.60	mg/L	1	3.60	5	3.6

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory:	Lubbock		
Analysis:	P, Total	Analytical Method:	S 6010B
QC Batch:	63374	Date Analyzed:	2009-09-09
Prep Batch:	54079	Sample Preparation:	2009-09-09
		Prep Method:	S 3010A
		Analyzed By:	RR
		Prepared By:	KV

Parameter	Flag	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Total Phosphorous		<b>0.143</b>	<b>0.143</b>	<0.00289	mg/L	1	0.00289	0.025	0.00289

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock  
 Analysis: Pb, Total Analytical Method: S 6010B Prep Method: S 3010A  
 QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR  
 Prep Batch: 54079 Sample Preparation: 2009-09-09 Prepared By: KV

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Lead	U	<0.00326	<0.00500	<0.00326	mg/L	1	0.00326	0.005	0.00326

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: El Paso  
 Analysis: pH Analytical Method: SM 4500-H+ Prep Method: N/A  
 QC Batch: 63341 Date Analyzed: 2009-09-02 Analyzed By: JG  
 Prep Batch: 54064 Sample Preparation: 2009-09-02 Prepared By: JR

Parameter	Flag	RL Result	Units	Dilution	RL
pH		7.19	s.u.	1	

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock  
 Analysis: Sb, Total Analytical Method: S 6010B Prep Method: S 3010A  
 QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR  
 Prep Batch: 54079 Sample Preparation: 2009-09-09 Prepared By: KV

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Antimony		<b>0.0870</b>	<b>0.0870</b>	<0.00440	mg/L	1	0.00440	0.02	0.0044

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock  
 Analysis: Se, Total Analytical Method: S 6010B Prep Method: S 3010A  
 QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR  
 Prep Batch: 54079 Sample Preparation: 2009-09-09 Prepared By: KV

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Selenium		<b>0.0850</b>	<b>0.0850</b>	<0.00508	mg/L	1	0.00508	0.02	0.00508

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock

Analysis: Semivolatiles

QC Batch: 63393

Prep Batch: 54112

Analytical Method: S 8270C

Date Analyzed: 2009-09-10

Sample Preparation: 2009-09-08

Prep Method: S 3510C

Analyzed By: MN

Prepared By: MN

Parameter	Flag	SDL	MQL	Method	Units	Dilution	SDL	MQL	MDL
		Based Result	Based Result	Blank Result				(Unadjusted)	(Unadjusted)
Pyridine	U	<0.000560	<0.00461	<0.000560	mg/L	0.922	0.000560	0.005	0.000608
N-Nitrosodimethylamine	U	<0.000509	<0.00461	<0.000509	mg/L	0.922	0.000509	0.005	0.000552
2-Picoline	U	<0.000376	<0.00461	<0.000376	mg/L	0.922	0.000376	0.005	0.000408
Methyl methanesulfonate	U	<0.000323	<0.00461	<0.000323	mg/L	0.922	0.000323	0.005	0.00035
Ethyl methanesulfonate	U	<0.000413	<0.00461	<0.000413	mg/L	0.922	0.000413	0.005	0.000448
Phenol	U	<0.000469	<0.00461	<0.000469	mg/L	0.922	0.000469	0.005	0.000509
Aniline	U	<0.000637	<0.00461	<0.000637	mg/L	0.922	0.000637	0.005	0.000691
bis(2-chloroethyl)ether	U	<0.000406	<0.00461	<0.000406	mg/L	0.922	0.000406	0.005	0.00044
2-Chlorophenol	U	<0.000495	<0.00461	<0.000495	mg/L	0.922	0.000495	0.005	0.000537
1,3-Dichlorobenzene (meta)	U	<0.000407	<0.00461	<0.000407	mg/L	0.922	0.000407	0.005	0.000441
1,4-Dichlorobenzene (para)	U	<0.000406	<0.00461	<0.000406	mg/L	0.922	0.000406	0.005	0.00044
Benzyl alcohol	U	<0.000496	<0.00461	<0.000496	mg/L	0.922	0.000496	0.005	0.000538
1,2-Dichlorobenzene (ortho)	U	<0.000408	<0.00461	<0.000408	mg/L	0.922	0.000408	0.005	0.000443
2-Methylphenol	U	<0.000669	<0.00461	<0.000669	mg/L	0.922	0.000669	0.005	0.000726
bis(2-chloroisopropyl)ether	U	<0.000464	<0.00461	<0.000464	mg/L	0.922	0.000464	0.005	0.000503
4-Methylphenol / 3-Methylphenol	U	<0.000472	<0.00461	<0.000472	mg/L	0.922	0.000472	0.005	0.000512
N-Nitrosodi-n-propylamine	U	<0.000675	<0.00461	<0.000675	mg/L	0.922	0.000675	0.005	0.000732
Hexachloroethane	U	<0.000467	<0.00461	<0.000467	mg/L	0.922	0.000467	0.005	0.000507
Acetophenone	U	<0.000391	<0.00461	<0.000391	mg/L	0.922	0.000391	0.005	0.000424
Nitrobenzene	U	<0.000429	<0.00461	<0.000429	mg/L	0.922	0.000429	0.005	0.000465
N-Nitrosopiperidine	U	<0.000408	<0.00461	<0.000408	mg/L	0.922	0.000408	0.005	0.000443
Isophorone	U	<0.000571	<0.00461	<0.000571	mg/L	0.922	0.000571	0.005	0.000619
2-Nitrophenol	U	<0.000374	<0.00461	<0.000374	mg/L	0.922	0.000374	0.005	0.000406
2,4-Dimethylphenol	U	<0.000440	<0.00461	<0.000440	mg/L	0.922	0.000440	0.005	0.000477
bis(2-chloroethoxy)methane	U	<0.000398	<0.00461	<0.000398	mg/L	0.922	0.000398	0.005	0.000432
2,4-Dichlorophenol	U	<0.000369	<0.00461	<0.000369	mg/L	0.922	0.000369	0.005	0.0004
1,2,4-Trichlorobenzene	U	<0.000372	<0.00461	<0.000372	mg/L	0.922	0.000372	0.005	0.000404
Benzoic acid	U	<0.00150	<0.00461	<0.00150	mg/L	0.922	0.00150	0.005	0.00163
Naphthalene	U	<0.000451	<0.00461	<0.000451	mg/L	0.922	0.000451	0.005	0.000489
a,a-Dimethylphenethylamine	U	<0.00119	<0.00461	<0.00119	mg/L	0.922	0.00119	0.005	0.00129
4-Chloroaniline	U	<0.000348	<0.00461	<0.000348	mg/L	0.922	0.000348	0.005	0.000378
2,6-Dichlorophenol	U	<0.000446	<0.00922	<0.000446	mg/L	0.922	0.000446	0.01	0.000484
Hexachlorobutadiene	U	<0.000477	<0.00461	<0.000477	mg/L	0.922	0.000477	0.005	0.000517
N-Nitroso-di-n-butylamine	U	<0.000605	<0.00461	<0.000605	mg/L	0.922	0.000605	0.005	0.000656
4-Chloro-3-methylphenol	U	<0.000481	<0.00461	<0.000481	mg/L	0.922	0.000481	0.005	0.000522
2-Methylnaphthalene	U	<0.000390	<0.00461	<0.000390	mg/L	0.922	0.000390	0.005	0.000423
1-Methylnaphthalene	U	<0.000456	<0.00461	<0.000456	mg/L	0.922	0.000456	0.005	0.000495
1,2,4,5-Tetrachlorobenzene	U	<0.000564	<0.00461	<0.000564	mg/L	0.922	0.000564	0.005	0.000612
Hexachlorocyclopentadiene	U	<0.000514	<0.00461	<0.000514	mg/L	0.922	0.000514	0.005	0.000558
2,4,6-Trichlorophenol	U	<0.000732	<0.00922	<0.000732	mg/L	0.922	0.000732	0.01	0.000794

*continued . . .*

*sample 209098 continued . . .*

Parameter	Flag	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
2,4,5-Trichlorophenol	<i>U</i>	<0.000769	<0.00461	<0.000769	mg/L	0.922	0.000769	0.005	0.000834
2-Chloronaphthalene	<i>U</i>	<0.000384	<0.00461	<0.000384	mg/L	0.922	0.000384	0.005	0.000416
1-Chloronaphthalene	<i>U</i>	<0.000439	<0.00461	<0.000439	mg/L	0.922	0.000439	0.005	0.000476
2-Nitroaniline	<i>U</i>	<0.000701	<0.00461	<0.000701	mg/L	0.922	0.000701	0.005	0.00076
Dimethylphthalate	<i>U</i>	<0.000593	<0.00461	<0.000593	mg/L	0.922	0.000593	0.005	0.000643
Acenaphthylene	<i>U</i>	<0.000540	<0.00461	<0.000540	mg/L	0.922	0.000540	0.005	0.000586
2,6-Dinitrotoluene	<i>U</i>	<0.000590	<0.00461	<0.000590	mg/L	0.922	0.000590	0.005	0.00064
3-Nitroaniline	<i>U</i>	<0.000665	<0.00461	<0.000665	mg/L	0.922	0.000665	0.005	0.000721
Acenaphthene	<i>U</i>	<0.000390	<0.00461	<0.000390	mg/L	0.922	0.000390	0.005	0.000423
2,4-Dinitrophenol	<i>U</i>	<0.000203	<0.00461	<0.000203	mg/L	0.922	0.000203	0.005	0.00022
Dibenzofuran	<i>U</i>	<0.000376	<0.00461	<0.000376	mg/L	0.922	0.000376	0.005	0.000408
Pentachlorobenzene	<i>U</i>	<0.000526	<0.00461	<0.000526	mg/L	0.922	0.000526	0.005	0.000571
4-Nitrophenol	<i>U</i>	<0.00170	<0.0230	<0.00170	mg/L	0.922	0.00170	0.025	0.00185
2,4-Dinitrotoluene	<i>U</i>	<0.000840	<0.00461	<0.000840	mg/L	0.922	0.000840	0.005	0.000911
1-Naphthylamine	<i>U</i>	<0.000634	<0.00461	<0.000634	mg/L	0.922	0.000634	0.005	0.000688
2,3,4,6-Tetrachlorophenol	<i>U</i>	<0.000521	<0.00922	<0.000521	mg/L	0.922	0.000521	0.01	0.000565
2-Naphthylamine	<i>U</i>	<0.000644	<0.00461	<0.000644	mg/L	0.922	0.000644	0.005	0.000699
Fluorene	<i>U</i>	<0.000597	<0.00461	<0.000597	mg/L	0.922	0.000597	0.005	0.000648
4-Chlorophenyl-phenylether	<i>U</i>	<0.000571	<0.00461	<0.000571	mg/L	0.922	0.000571	0.005	0.000619
Diethylphthalate	<i>U</i>	<0.000763	<0.00461	<0.000763	mg/L	0.922	0.000763	0.005	0.000828
4-Nitroaniline	<i>U</i>	<0.000647	<0.00461	<0.000647	mg/L	0.922	0.000647	0.005	0.000702
Diphenylhydrazine	<i>U</i>	<0.000606	<0.00461	<0.000606	mg/L	0.922	0.000606	0.005	0.000657
4,6-Dinitro-2-methylphenol	<i>U</i>	<0.00182	<0.00461	<0.00182	mg/L	0.922	0.00182	0.005	0.00198
Diphenylamine	<i>U</i>	<0.000406	<0.00461	<0.000406	mg/L	0.922	0.000406	0.005	0.00044
4-Bromophenyl-phenylether	<i>U</i>	<0.000507	<0.00461	<0.000507	mg/L	0.922	0.000507	0.005	0.00055
Phenacetin	<i>U</i>	<0.000558	<0.00461	<0.000558	mg/L	0.922	0.000558	0.005	0.000605
Hexachlorobenzene	<i>U</i>	<0.000466	<0.00461	<0.000466	mg/L	0.922	0.000466	0.005	0.000506
4-Aminobiphenyl	<i>U</i>	<0.000486	<0.00461	<0.000486	mg/L	0.922	0.000486	0.005	0.000527
Pentachlorophenol	<i>U</i>	<0.000401	<0.00922	<0.000401	mg/L	0.922	0.000401	0.01	0.000435
Anthracene	<i>U</i>	<0.000395	<0.00461	<0.000395	mg/L	0.922	0.000395	0.005	0.000428
Pentachloronitrobenzene	<i>U</i>	<0.000376	<0.00461	<0.000376	mg/L	0.922	0.000376	0.005	0.000408
Pronamide	<i>U</i>	<0.000439	<0.00461	<0.000439	mg/L	0.922	0.000439	0.005	0.000476
Phenanthrene	<i>U</i>	<0.000505	<0.00461	<0.000505	mg/L	0.922	0.000505	0.005	0.000548
Di-n-butylphthalate	<i>U</i>	<0.000445	<0.00461	<0.000445	mg/L	0.922	0.000445	0.005	0.000483
Fluoranthene	<i>U</i>	<0.000583	<0.00461	<0.000583	mg/L	0.922	0.000583	0.005	0.000632
Benzidine	<i>U</i>	<0.00219	<0.0230	<0.00219	mg/L	0.922	0.00219	0.025	0.00238
Pyrene	<sup>1</sup> <i>U</i>	<0.000667	<0.00461	<0.000667	mg/L	0.922	0.000667	0.005	0.000723
p-Dimethylaminoazobenzene	<i>U</i>	<0.000832	<0.00461	<0.000832	mg/L	0.922	0.000832	0.005	0.000902
Butylbenzylphthalate	<i>U</i>	<0.000410	<0.00461	<0.000410	mg/L	0.922	0.000410	0.005	0.000445
Benzo(a)anthracene	<sup>2</sup> <i>U</i>	<0.000486	<0.00461	<0.000486	mg/L	0.922	0.000486	0.005	0.000527
3,3-Dichlorobenzidine	<i>U</i>	<0.00109	<0.00461	<0.00109	mg/L	0.922	0.00109	0.005	0.00118
Chrysene	<i>U</i>	<0.000588	<0.00461	<0.000588	mg/L	0.922	0.000588	0.005	0.000638
bis(2-ethylhexyl)phthalate	<i>U</i>	<0.000517	<0.00461	<0.000517	mg/L	0.922	0.000517	0.005	0.000561

*continued . . .*<sup>1</sup> Concentration biased low.<sup>2</sup> Concentration biased low.

*sample 209098 continued . . .*

Parameter	Flag	SDL	SQL	Method	Units	Dilution	SDL	SQL	MDL
		Based Result	Based Result	Blank Result				(Unadjusted)	(Unadjusted)
Di-n-octylphthalate	<sup>U</sup>	<0.00107	<0.00461	<0.00107 mg/L	0.922	0.00107	0.005	0.00116	
Benzo(b)fluoranthene	<sup>3 U</sup>	<0.000810	<0.00461	<0.000810 mg/L	0.922	0.000810	0.005	0.000879	
Benzo(k)fluoranthene	<sup>U</sup>	<0.000779	<0.00461	<0.000779 mg/L	0.922	0.000779	0.005	0.000845	
7,12-Dimethylbenz(a)anthracene	<sup>U</sup>	<0.000940	<0.00461	<0.000940 mg/L	0.922	0.000940	0.005	0.00102	
Benzo(a)pyrene	<sup>U</sup>	<0.00154	<0.00461	<0.00154 mg/L	0.922	0.00154	0.005	0.00167	
3-Methylcholanthrene	<sup>U</sup>	<0.000837	<0.00461	<0.000837 mg/L	0.922	0.000837	0.005	0.000908	
Dibenzo(a,j)acridine	<sup>U</sup>	<0.00119	<0.00461	<0.00119 mg/L	0.922	0.00119	0.005	0.00129	
Indeno(1,2,3-cd)pyrene	<sup>U</sup>	<0.000795	<0.00461	<0.000795 mg/L	0.922	0.000795	0.005	0.000862	
Dibenzo(a,h)anthracene	<sup>U</sup>	<0.000746	<0.00461	<0.000746 mg/L	0.922	0.000746	0.005	0.000809	
Benzo(g,h,i)perylene	<sup>U</sup>	<0.000875	<0.00461	<0.000875 mg/L	0.922	0.000875	0.005	0.000949	

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		0.0261	mg/L	0.922	0.0800	33	10 - 53.1
Phenol-d5		0.0154	mg/L	0.922	0.0800	19	10 - 36.9
Nitrobenzene-d5		0.0426	mg/L	0.922	0.0800	53	23.8 - 108
2-Fluorobiphenyl		0.0444	mg/L	0.922	0.0800	56	15.9 - 127
2,4,6-Tribromophenol		0.0531	mg/L	0.922	0.0800	66	10 - 123
Terphenyl-d14		0.0455	mg/L	0.922	0.0800	57	17.2 - 160

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: El Paso

Analysis: SO4 (IC)

QC Batch: 63677

Prep Batch: 54366

Analytical Method: E 300.0

Date Analyzed: 2009-09-03

Sample Preparation: 2009-09-03

Prep Method: N/A

Analyzed By: JR

Prepared By: JR

Parameter	Flag	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Sulfate		<b>5640</b>	<b>5640</b>	<252	mg/L	500	252	1.33	0.5038

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: El Paso

Analysis: TDS

QC Batch: 63473

Prep Batch: 54173

Analytical Method: SM 2540C

Date Analyzed: 2009-09-03

Sample Preparation: 2009-09-03

Prep Method: N/A

Analyzed By: MD

Prepared By: MD

<sup>3</sup>Concentration biased low.



Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		<b>13600</b>	<b>13600</b>	<5.00	mg/L	1	5.00		5

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock

Analysis: TKN

Analytical Method: E 351.3

Prep Method: N/A

QC Batch: 63441

Date Analyzed: 2009-09-09

Analyzed By: AH

Prep Batch: 54150

Sample Preparation: 2009-09-09

Prepared By: AH

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Kjeldahl Nitrogen - N	<sup>U</sup>	<2.45	<10.0	<2.45	mg/L	1	2.45	10	2.45

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock

Analysis: Tl, Total

Analytical Method: S 6010B

Prep Method: S 3010A

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Prep Batch: 54079

Sample Preparation: 2009-09-09

Prepared By: KV

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Thallium	<sup>U</sup>	<0.00488	<0.0500	<0.00488	mg/L	1	0.00488	0.05	0.00488

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock

Analysis: TOC

Analytical Method: SM 5310C

Prep Method: N/A

QC Batch: 63678

Date Analyzed: 2009-09-17

Analyzed By: KV

Prep Batch: 54367

Sample Preparation: 2009-09-17

Prepared By: KV

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Organic Carbon		<b>1.16</b>	<b>1.16</b>	<0.401	mg/L	1	0.401	1	0.401

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock

Analysis: Total Cyanide

Analytical Method: SM 4500-CN C,E

Prep Method: N/A

QC Batch: 63391 Date Analyzed: 2009-09-07 Analyzed By: AH  
 Prep Batch: 54106 Sample Preparation: 2009-09-07 Prepared By: AH

Parameter	Flag	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Total Cyanide	U	<0.0110	<0.0150	<0.0110	mg/L	1	0.0110	0.015	0.011

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock  
 Analysis: TPH DRO Analytical Method: Mod. 8015B Prep Method: N/A  
 QC Batch: 63307 Date Analyzed: 2009-09-07 Analyzed By: AW  
 Prep Batch: 54035 Sample Preparation: 2009-09-04 Prepared By: AW

Parameter	Flag	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
DRO	U	<0.876	<5.00	<0.876	mg/L	1	0.876	5	0.876

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		11.5	mg/L	1	10.0	115	57.3 - 151

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock  
 Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5030B  
 QC Batch: 63239 Date Analyzed: 2009-09-03 Analyzed By: ER  
 Prep Batch: 53976 Sample Preparation: 2009-09-03 Prepared By: ER

Parameter	Flag	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<0.152	<0.200	<0.152	mg/L	1	0.152	0.2	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.111	mg/L	1	0.100	111	70.8 - 112
4-Bromofluorobenzene (4-BFB)		0.108	mg/L	1	0.100	108	80 - 109

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock  
 Analysis: V, Total Analytical Method: S 6010B Prep Method: S 3010A  
 QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR  
 Prep Batch: 54079 Sample Preparation: 2009-09-09 Prepared By: KV

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Vanadium		<b>0.214</b>	<b>0.214</b>	<0.000426	mg/L	1	0.000426	0.005	0.000426

**Sample: 209098 - HLSF-0154-DRW-016-0909**

Laboratory: Lubbock

Analysis: Zn, Total

QC Batch: 63374

Prep Batch: 54079

Analytical Method: S 6010B

Date Analyzed: 2009-09-09

Sample Preparation: 2009-09-09

Prep Method: S 3010A

Analyzed By: RR

Prepared By: KV

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Zinc	U	<0.000465	<0.00500	<0.000465	mg/L	1	0.000465	0.005	0.000465

**Method Blank (1)**

QC Batch: 63239

Prep Batch: 53976

Date Analyzed: 2009-09-03

QC Preparation: 2009-09-03

Analyzed By: ER

Prepared By: ER

Parameter	Flag	Result	Units	Reporting Limits
GRO		<0.152	mg/L	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.103	mg/L	1	0.100	103	70.8 - 112
4-Bromofluorobenzene (4-BFB)		0.100	mg/L	1	0.100	100	80 - 109

**Method Blank (1)**

QC Batch: 63280

Prep Batch: 54009

Date Analyzed: 2009-09-04

QC Preparation: 2009-09-04

Analyzed By: TP

Prepared By: TP

Parameter	Flag	Result	Units	Reporting Limits
Total Mercury		<0.0000329	mg/L	3.29e-05

**Method Blank (1)**

QC Batch: 63307

Prep Batch: 54035

Date Analyzed: 2009-09-07

QC Preparation: 2009-09-04

Analyzed By: AW

Prepared By: AW

Parameter	Flag	Result	Units	Reporting Limits
DRO		<0.876	mg/L	0.876

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		8.25	mg/L	1	10.0	82	57.3 - 151

**Method Blank (1)**

QC Batch: 63330 Date Analyzed: 2009-09-02 Analyzed By: MD  
Prep Batch: 54057 QC Preparation: 2009-09-02 Prepared By: MD

Parameter	Flag	Result	Units	Reporting Limits
Hexavalent Chromium		<0.00594	mg/L	0.00594

**Method Blank (1)**

QC Batch: 63370 Date Analyzed: 2009-09-05 Analyzed By: AH  
Prep Batch: 54092 QC Preparation: 2009-09-05 Prepared By: AH

Parameter	Flag	Result	Units	Reporting Limits
Ammonia-N		<0.353	mg/L	0.353

**Method Blank (1)**

QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR  
Prep Batch: 54079 QC Preparation: 2009-09-09 Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Total Silver		<0.00111	mg/L	0.00111

**Method Blank (1)**

QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR  
Prep Batch: 54079 QC Preparation: 2009-09-09 Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Total Aluminum		<0.00301	mg/L	0.00301

**Method Blank (1)**QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Total Arsenic		<0.00448	mg/L	0.00448

**Method Blank (1)**QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Total Barium		<0.00105	mg/L	0.00105

**Method Blank (1)**QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Total Beryllium		<0.000450	mg/L	0.00045

**Method Blank (1)**QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Total Cadmium		<0.000303	mg/L	0.000303

**Method Blank (1)**QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Total Cobalt		<0.000822	mg/L	0.000822

**Method Blank (1)**QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Total Chromium		<0.000583	mg/L	0.000583

**Method Blank (1)**QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Total Copper		<0.000843	mg/L	0.000843

**Method Blank (1)**QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Total Iron		<0.000872	mg/L	0.000872

**Method Blank (1)**QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Total Manganese		<0.000305	mg/L	0.000305

**Method Blank (1)**QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Total Molybdenum		<0.00119	mg/L	0.00119

**Method Blank (1)**QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Total Nickel		<0.00121	mg/L	0.00121

**Method Blank (1)**QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Total Phosphorous		<0.00289	mg/L	0.00289

**Method Blank (1)**QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Total Lead		<0.00326	mg/L	0.00326

**Method Blank (1)**QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Total Antimony		<0.00440	mg/L	0.0044

**Method Blank (1)**QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Total Selenium		<0.00508	mg/L	0.00508

**Method Blank (1)**QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Total Thallium		<0.00488	mg/L	0.00488

**Method Blank (1)**QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Total Vanadium		<0.000426	mg/L	0.000426

**Method Blank (1)**QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Total Zinc		<0.000465	mg/L	0.000465

**Method Blank (1)**QC Batch: 63391  
Prep Batch: 54106Date Analyzed: 2009-09-07  
QC Preparation: 2009-09-07Analyzed By: AH  
Prepared By: AH

Parameter	Flag	Result	Units	Reporting Limits
Total Cyanide		<0.0110	mg/L	0.011

**Method Blank (1)**QC Batch: 63393  
Prep Batch: 54112Date Analyzed: 2009-09-10  
QC Preparation: 2009-09-08Analyzed By: MN  
Prepared By: MN

Parameter	Flag	Result	Units	Reporting Limits
Pyridine		<0.000608	mg/L	0.000608
N-Nitrosodimethylamine		<0.000552	mg/L	0.000552

*continued . . .*



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Parameter	Flag	Result	Units	Reporting Limits
2-Picoline		<0.000408	mg/L	0.000408
Methyl methanesulfonate		<0.000350	mg/L	0.00035
Ethyl methanesulfonate		<0.000448	mg/L	0.000448
Phenol		<0.000509	mg/L	0.000509
Aniline		<0.000691	mg/L	0.000691
bis(2-chloroethyl)ether		<0.000440	mg/L	0.00044
2-Chlorophenol		<0.000537	mg/L	0.000537
1,3-Dichlorobenzene (meta)		<0.000441	mg/L	0.000441
1,4-Dichlorobenzene (para)		<0.000440	mg/L	0.00044
Benzyl alcohol		<0.000538	mg/L	0.000538
1,2-Dichlorobenzene (ortho)		<0.000443	mg/L	0.000443
2-Methylphenol		<0.000726	mg/L	0.000726
bis(2-chloroisopropyl)ether		<0.000503	mg/L	0.000503
4-Methylphenol / 3-Methylphenol		<0.000512	mg/L	0.000512
N-Nitrosodi-n-propylamine		<0.000732	mg/L	0.000732
Hexachloroethane		<0.000507	mg/L	0.000507
Acetophenone		0.000600	mg/L	0.000424
Nitrobenzene		<0.000465	mg/L	0.000465
N-Nitrosopiperidine		<0.000443	mg/L	0.000443
Isophorone		<0.000619	mg/L	0.000619
2-Nitrophenol		<0.000406	mg/L	0.000406
2,4-Dimethylphenol		<0.000477	mg/L	0.000477
bis(2-chloroethoxy)methane		<0.000432	mg/L	0.000432
2,4-Dichlorophenol		<0.000400	mg/L	0.0004
1,2,4-Trichlorobenzene		<0.000404	mg/L	0.000404
Benzoic acid		<0.00163	mg/L	0.00163
Naphthalene		<0.000489	mg/L	0.000489
a,a-Dimethylphenethylamine		<0.00129	mg/L	0.00129
4-Chloroaniline		<0.000378	mg/L	0.000378
2,6-Dichlorophenol		<0.000484	mg/L	0.000484
Hexachlorobutadiene		<0.000517	mg/L	0.000517
N-Nitroso-di-n-butylamine		<0.000656	mg/L	0.000656
4-Chloro-3-methylphenol		<0.000522	mg/L	0.000522
2-Methylnaphthalene		<0.000423	mg/L	0.000423
1-Methylnaphthalene		<0.000495	mg/L	0.000495
1,2,4,5-Tetrachlorobenzene		<0.000612	mg/L	0.000612
Hexachlorocyclopentadiene		<0.000558	mg/L	0.000558
2,4,6-Trichlorophenol		<0.000794	mg/L	0.000794
2,4,5-Trichlorophenol		<0.000834	mg/L	0.000834
2-Chloronaphthalene		<0.000416	mg/L	0.000416
1-Chloronaphthalene		<0.000476	mg/L	0.000476
2-Nitroaniline		<0.000760	mg/L	0.00076
Dimethylphthalate		<0.000643	mg/L	0.000643
Acenaphthylene		<0.000586	mg/L	0.000586
2,6-Dinitrotoluene		<0.000640	mg/L	0.00064
3-Nitroaniline		<0.000721	mg/L	0.000721
Acenaphthene		<0.000423	mg/L	0.000423

*continued . . .*

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Parameter	Flag	Result	Units	Reporting Limits
2,4-Dinitrophenol		<0.000220	mg/L	0.00022
Dibenzofuran		<0.000408	mg/L	0.000408
Pentachlorobenzene		<0.000571	mg/L	0.000571
4-Nitrophenol		<0.00185	mg/L	0.00185
2,4-Dinitrotoluene		<0.000911	mg/L	0.000911
1-Naphthylamine		<0.000688	mg/L	0.000688
2,3,4,6-Tetrachlorophenol		<0.000565	mg/L	0.000565
2-Naphthylamine		<0.000699	mg/L	0.000699
Fluorene		<0.000648	mg/L	0.000648
4-Chlorophenyl-phenylether		<0.000619	mg/L	0.000619
Diethylphthalate		<0.000828	mg/L	0.000828
4-Nitroaniline		<0.000702	mg/L	0.000702
Diphenylhydrazine		<0.000657	mg/L	0.000657
4,6-Dinitro-2-methylphenol		<0.00198	mg/L	0.00198
Diphenylamine		<0.000440	mg/L	0.00044
4-Bromophenyl-phenylether		<0.000550	mg/L	0.00055
Phenacetin		<0.000605	mg/L	0.000605
Hexachlorobenzene		<0.000506	mg/L	0.000506
4-Aminobiphenyl		<0.000527	mg/L	0.000527
Pentachlorophenol		<0.000435	mg/L	0.000435
Anthracene		<0.000428	mg/L	0.000428
Pentachloronitrobenzene		<0.000408	mg/L	0.000408
Pronamide		<0.000476	mg/L	0.000476
Phenanthrene		<0.000548	mg/L	0.000548
Di-n-butylphthalate		<0.000483	mg/L	0.000483
Fluoranthene		<0.000632	mg/L	0.000632
Benzidine		<0.00238	mg/L	0.00238
Pyrene		<0.000723	mg/L	0.000723
p-Dimethylaminoazobenzene		<0.000902	mg/L	0.000902
Butylbenzylphthalate		<0.000445	mg/L	0.000445
Benzo(a)anthracene		<0.000527	mg/L	0.000527
3,3-Dichlorobenzidine		<0.00118	mg/L	0.00118
Chrysene		<0.000638	mg/L	0.000638
bis(2-ethylhexyl)phthalate		<0.000561	mg/L	0.000561
Di-n-octylphthalate		<0.00116	mg/L	0.00116
Benzo(b)fluoranthene		<0.000879	mg/L	0.000879
Benzo(k)fluoranthene		<0.000845	mg/L	0.000845
7,12-Dimethylbenz(a)anthracene		<0.00102	mg/L	0.00102
Benzo(a)pyrene		<0.00167	mg/L	0.00167
3-Methylcholanthrene		<0.000908	mg/L	0.000908
Dibenzo(a,j)acridine		<0.00129	mg/L	0.00129
Indeno(1,2,3-cd)pyrene		<0.000862	mg/L	0.000862
Dibenzo(a,h)anthracene		<0.000809	mg/L	0.000809
Benzo(g,h,i)perylene		<0.000949	mg/L	0.000949

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		0.0243	mg/L	1	0.0800	30	10 - 53.1
Phenol-d5		0.0140	mg/L	1	0.0800	18	10 - 36.9
Nitrobenzene-d5		0.0454	mg/L	1	0.0800	57	23.8 - 108
2-Fluorobiphenyl		0.0489	mg/L	1	0.0800	61	15.9 - 127
2,4,6-Tribromophenol		0.0596	mg/L	1	0.0800	74	10 - 123
Terphenyl-d14		0.0518	mg/L	1	0.0800	65	17.2 - 160

**Method Blank (1)**

QC Batch: 63411  
Prep Batch: 54129

Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-08

Analyzed By: MD  
Prepared By: MD

Parameter	Flag	Result	Units	Reporting Limits
Oil and Grease		<3.60	mg/L	3.6

**Method Blank (1)**

QC Batch: 63425  
Prep Batch: 54137

Date Analyzed: 2009-09-10  
QC Preparation: 2009-09-04

Analyzed By: DS  
Prepared By: DS

Parameter	Flag	Result	Units	Reporting Limits
HMX		<0.123	µg/L	0.123
RDX		<0.298	µg/L	0.298
1,3,5-Trinitrobenzene		<0.339	µg/L	0.339
1,3-Dinitrobenzene		<0.389	µg/L	0.389
Nitrobenzene		<0.379	µg/L	0.379
Tetryl		<0.413	µg/L	0.413
TNT		<0.464	µg/L	0.464
4-Amino-DNT		<0.319	µg/L	0.319
2-Amino-DNT		<0.391	µg/L	0.391
2,6-DNT		<0.323	µg/L	0.323
2,4-DNT		<0.366	µg/L	0.366
2-NT		<0.379	µg/L	0.379
4-NT		<0.398	µg/L	0.398
3-NT		<0.346	µg/L	0.346

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
1,2-Dinitrobenzene		2.40	µg/L	1	2.50	96	19.8 - 160

**Method Blank (1)**

QC Batch: 63441 Date Analyzed: 2009-09-09 Analyzed By: AH  
Prep Batch: 54150 QC Preparation: 2009-09-09 Prepared By: AH

Parameter	Flag	Result	Units	Reporting Limits
Total Kjeldahl Nitrogen - N		<2.45	mg/L	2.45

**Method Blank (1)**

QC Batch: 63462 Date Analyzed: 2009-09-11 Analyzed By: RR  
Prep Batch: 54154 QC Preparation: 2009-09-11 Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Dissolved Chromium		<0.000583	mg/L	0.000583

**Method Blank (1)**

QC Batch: 63473 Date Analyzed: 2009-09-03 Analyzed By: MD  
Prep Batch: 54173 QC Preparation: 2009-09-03 Prepared By: MD

Parameter	Flag	Result	Units	Reporting Limits
Total Dissolved Solids		<5.00	mg/L	5

**Method Blank (1)**

QC Batch: 63527 Date Analyzed: 2009-09-10 Analyzed By: JG  
Prep Batch: 54231 QC Preparation: 2009-09-10 Prepared By: JG

Parameter	Flag	Result	Units	Reporting Limits
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1
Carbonate Alkalinity		<1.00	mg/L as CaCo3	1
Bicarbonate Alkalinity		<4.00	mg/L as CaCo3	4
Total Alkalinity		<4.00	mg/L as CaCo3	4

**Method Blank (1)**

QC Batch: 63545 Date Analyzed: 2009-09-15 Analyzed By: RR  
Prep Batch: 54079 QC Preparation: 2009-09-09 Prepared By: KV

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Parameter	Flag	Result	Units	Reporting Limits
Total Calcium		<0.117	mg/L	0.117

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**Method Blank (1)**

QC Batch: 63545                      Date Analyzed: 2009-09-15                      Analyzed By: RR  
Prep Batch: 54079                      QC Preparation: 2009-09-09                      Prepared By: KV

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Parameter	Flag	Result	Units	Reporting Limits
Total Potassium		<0.172	mg/L	0.172

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**Method Blank (1)**

QC Batch: 63545                      Date Analyzed: 2009-09-15                      Analyzed By: RR  
Prep Batch: 54079                      QC Preparation: 2009-09-09                      Prepared By: KV

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Parameter	Flag	Result	Units	Reporting Limits
Total Magnesium		<0.160	mg/L	0.16

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**Method Blank (1)**

QC Batch: 63545                      Date Analyzed: 2009-09-15                      Analyzed By: RR  
Prep Batch: 54079                      QC Preparation: 2009-09-09                      Prepared By: KV

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Parameter	Flag	Result	Units	Reporting Limits
Total Sodium		<0.0500	mg/L	0.05

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**Method Blank (1)**

QC Batch: 63674                      Date Analyzed: 2009-09-16                      Analyzed By: JR  
Prep Batch: 54363                      QC Preparation: 2009-09-16                      Prepared By: JR

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Parameter	Flag	Result	Units	Reporting Limits
Fluoride		<0.0434	mg/L	0.0434

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**Method Blank (1)**

QC Batch: 63677                      Date Analyzed: 2009-09-03                      Analyzed By: JR  
Prep Batch: 54366                      QC Preparation: 2009-09-03                      Prepared By: JR

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Parameter	Flag	Result	Units	Reporting Limits
Bromide		<0.0394	mg/L	0.0394

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**Method Blank (1)**

QC Batch: 63677                      Date Analyzed: 2009-09-03                      Analyzed By: JR  
Prep Batch: 54366                      QC Preparation: 2009-09-03                      Prepared By: JR

Parameter	Flag	Result	Units	Reporting Limits
Chloride		<0.640	mg/L	0.6404

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**Method Blank (1)**

QC Batch: 63677                      Date Analyzed: 2009-09-03                      Analyzed By: JR  
Prep Batch: 54366                      QC Preparation: 2009-09-03                      Prepared By: JR

Parameter	Flag	Result	Units	Reporting Limits
Sulfate		<0.504	mg/L	0.5038

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**Method Blank (1)**

QC Batch: 63678                      Date Analyzed: 2009-09-17                      Analyzed By: KV  
Prep Batch: 54367                      QC Preparation: 2009-09-17                      Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Total Organic Carbon		<0.401	mg/L	0.401

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**Method Blank (1)**

QC Batch: 63681                      Date Analyzed: 2009-09-17                      Analyzed By: KV  
Prep Batch: 54370                      QC Preparation: 2009-09-17                      Prepared By: KV

Parameter	Flag	Result	Units	Reporting Limits
Nitrate and Nitrite as N		<0.0350	mg/L	0.035

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**Duplicate (1)**     Duplicated Sample: 209099

QC Batch: 63341                      Date Analyzed: 2009-09-02                      Analyzed By: JG  
Prep Batch: 54064                      QC Preparation: 2009-09-02                      Prepared By: JG

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
pH	6.94	6.94	s.u.	1	0	1.1

**Duplicate (1)** Duplicated Sample: 208953

QC Batch: 63473 Date Analyzed: 2009-09-03 Analyzed By: MD  
 Prep Batch: 54173 QC Preparation: 2009-09-03 Prepared By: MD

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	28800	29500	mg/L	1	2	10

**Duplicate (1)** Duplicated Sample: 208953

QC Batch: 63527 Date Analyzed: 2009-09-10 Analyzed By: JG  
 Prep Batch: 54231 QC Preparation: 2009-09-10 Prepared By: JG

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Hydroxide Alkalinity	<1.00	<1.00	mg/L as CaCo3	1	0	20
Carbonate Alkalinity	<1.00	<1.00	mg/L as CaCo3	1	0	20
Bicarbonate Alkalinity	262	260	mg/L as CaCo3	1	1	20
Total Alkalinity	262	260	mg/L as CaCo3	1	1	20

**Laboratory Control Spike (LCS-1)**

QC Batch: 63239 Date Analyzed: 2009-09-03 Analyzed By: ER  
 Prep Batch: 53976 QC Preparation: 2009-09-03 Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	1.08	mg/L	1	1.00	<0.152	108	75.5 - 118

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	1.05	mg/L	1	1.00	<0.152	105	75.5 - 118	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.109	0.104	mg/L	1	0.100	109	104	78.2 - 121
4-Bromofluorobenzene (4-BFB)	0.106	0.104	mg/L	1	0.100	106	104	82.2 - 118

**Laboratory Control Spike (LCS-1)**QC Batch: 63280  
Prep Batch: 54009Date Analyzed: 2009-09-04  
QC Preparation: 2009-09-04Analyzed By: TP  
Prepared By: TP

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Mercury	0.00103	mg/L	1	0.00100	<0.0000329	103	90.3 - 108

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Mercury	0.00104	mg/L	1	0.00100	<0.0000329	104	90.3 - 108	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Laboratory Control Spike (LCS-1)**QC Batch: 63307  
Prep Batch: 54035Date Analyzed: 2009-09-07  
QC Preparation: 2009-09-04Analyzed By: AW  
Prepared By: AW

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	27.0	mg/L	1	25.0	<0.876	108	78.6 - 154

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	28.3	mg/L	1	25.0	<0.876	113	78.6 - 154	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Triacontane	8.66	8.90	mg/L	1	10.0	87	89	57.3 - 151

**Laboratory Control Spike (LCS-1)**QC Batch: 63330  
Prep Batch: 54057Date Analyzed: 2009-09-02  
QC Preparation: 2009-09-02Analyzed By: MD  
Prepared By: MD

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Hexavalent Chromium	0.515	mg/L	1	0.500	<0.00594	103	95.4 - 105

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

*continued ...*



*control spikes continued . . .*

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Hexavalent Chromium	0.506	mg/L	1	0.500	<0.00594	101	95.4 - 105	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Laboratory Control Spike (LCS-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Prep Batch: 54079

QC Preparation: 2009-09-09

Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Silver	0.128	mg/L	1	0.125	<0.00111	102	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Silver	0.125	mg/L	1	0.125	<0.00111	100	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Laboratory Control Spike (LCS-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Prep Batch: 54079

QC Preparation: 2009-09-09

Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Aluminum	0.989	mg/L	1	1.00	<0.00301	99	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Aluminum	0.970	mg/L	1	1.00	<0.00301	97	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Laboratory Control Spike (LCS-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Prep Batch: 54079

QC Preparation: 2009-09-09

Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Arsenic	0.506	mg/L	1	0.500	<0.00448	101	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Arsenic	0.493	mg/L	1	0.500	<0.00448	99	85 - 115	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374  
Prep Batch: 54079

Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Barium	1.05	mg/L	1	1.00	<0.00105	105	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Barium	1.04	mg/L	1	1.00	<0.00105	104	85 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374  
Prep Batch: 54079

Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Beryllium	0.0260	mg/L	1	0.0250	<0.000450	104	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Beryllium	0.0250	mg/L	1	0.0250	<0.000450	100	85 - 115	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374  
Prep Batch: 54079

Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Cadmium	0.263	mg/L	1	0.250	<0.000303	105	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Cadmium	0.258	mg/L	1	0.250	<0.000303	103	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374  
Prep Batch: 54079

Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Cobalt	0.254	mg/L	1	0.250	<0.000822	102	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Cobalt	0.251	mg/L	1	0.250	<0.000822	100	85 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374  
Prep Batch: 54079

Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Chromium	0.102	mg/L	1	0.100	<0.000583	102	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Chromium	0.0990	mg/L	1	0.100	<0.000583	99	85 - 115	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374  
Prep Batch: 54079

Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Copper	0.130	mg/L	1	0.125	<0.000843	104	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Copper	0.127	mg/L	1	0.125	<0.000843	102	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374  
Prep Batch: 54079

Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Iron	0.523	mg/L	1	0.500	<0.000872	105	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Iron	0.515	mg/L	1	0.500	<0.000872	103	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374  
Prep Batch: 54079

Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Manganese	0.264	mg/L	1	0.250	<0.000305	106	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Manganese	0.259	mg/L	1	0.250	<0.000305	104	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374  
Prep Batch: 54079

Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Molybdenum	0.552	mg/L	1	0.500	<0.00119	110	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Molybdenum	0.543	mg/L	1	0.500	<0.00119	109	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374  
Prep Batch: 54079

Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Nickel	0.263	mg/L	1	0.250	<0.00121	105	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Nickel	0.257	mg/L	1	0.250	<0.00121	103	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374  
Prep Batch: 54079

Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Phosphorous	0.495	mg/L	1	0.500	<0.00289	99	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Phosphorous	0.481	mg/L	1	0.500	<0.00289	96	85 - 115	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374  
Prep Batch: 54079

Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Lead	0.507	mg/L	1	0.500	<0.00326	101	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Lead	0.492	mg/L	1	0.500	<0.00326	98	85 - 115	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374  
Prep Batch: 54079

Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Antimony	0.245	mg/L	1	0.250	<0.00440	98	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Antimony	0.244	mg/L	1	0.250	<0.00440	98	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374  
Prep Batch: 54079

Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Selenium	0.457	mg/L	1	0.500	<0.00508	91	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Selenium	0.447	mg/L	1	0.500	<0.00508	89	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374  
Prep Batch: 54079

Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Thallium	0.522	mg/L	1	0.500	<0.00488	104	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Thallium	0.510	mg/L	1	0.500	<0.00488	102	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374  
Prep Batch: 54079

Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Vanadium	0.252	mg/L	1	0.250	<0.000426	101	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Vanadium	0.248	mg/L	1	0.250	<0.000426	99	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374  
Prep Batch: 54079

Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Zinc	0.233	mg/L	1	0.250	<0.000465	93	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Zinc	0.230	mg/L	1	0.250	<0.000465	92	85 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63393  
Prep Batch: 54112

Date Analyzed: 2009-09-10  
QC Preparation: 2009-09-08

Analyzed By: MN  
Prepared By: MN

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Phenol	0.0142	mg/L	1	0.0800	<0.000509	18	10 - 66.5
2-Chlorophenol	0.0356	mg/L	1	0.0800	<0.000537	44	11.2 - 108
1,4-Dichlorobenzene (para)	0.0341	mg/L	1	0.0800	<0.000440	43	16 - 101
N-Nitrosodi-n-propylamine	0.0466	mg/L	1	0.0800	<0.000732	58	10 - 142
1,2,4-Trichlorobenzene	0.0353	mg/L	1	0.0800	<0.000404	44	18 - 118
Naphthalene	0.0369	mg/L	1	0.0800	<0.000489	46	20.2 - 114
4-Chloro-3-methylphenol	0.0539	mg/L	1	0.0800	<0.000522	67	21.5 - 125
Acenaphthylene	0.0465	mg/L	1	0.0800	<0.000586	58	25.8 - 121
Acenaphthene	0.0462	mg/L	1	0.0800	<0.000423	58	33.5 - 122
4-Nitrophenol	0.0204	mg/L	1	0.0800	<0.00185	26	10 - 125
2,4-Dinitrotoluene	0.0550	mg/L	1	0.0800	<0.000911	69	53 - 130
Fluorene	0.0502	mg/L	1	0.0800	<0.000648	63	44.6 - 117
Pentachlorophenol	0.0148	mg/L	1	0.0800	<0.000435	18	10 - 139
Anthracene	0.0481	mg/L	1	0.0800	<0.000428	60	57.5 - 115
Phenanthrene	0.0504	mg/L	1	0.0800	<0.000548	63	55.5 - 118
Fluoranthene	0.0541	mg/L	1	0.0800	<0.000632	68	57 - 122
Pyrene	0.0453	mg/L	1	0.0800	<0.000723	57	58.5 - 130
Benzo(a)anthracene	0.0467	mg/L	1	0.0800	<0.000527	58	63.4 - 109
Chrysene	0.0492	mg/L	1	0.0800	<0.000638	62	54.7 - 114
Benzo(b)fluoranthene	0.0434	mg/L	1	0.0800	<0.000879	54	64.8 - 120
Benzo(k)fluoranthene	0.0675	mg/L	1	0.0800	<0.000845	84	70.3 - 114
Benzo(a)pyrene	0.0612	mg/L	1	0.0800	<0.00167	76	63.7 - 120
Indeno(1,2,3-cd)pyrene	0.0598	mg/L	1	0.0800	<0.000862	75	65.4 - 119
Dibenzo(a,h)anthracene	0.0600	mg/L	1	0.0800	<0.000809	75	68.7 - 117
Benzo(g,h,i)perylene	0.0613	mg/L	1	0.0800	<0.000949	77	57.2 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Phenol	0.0145	mg/L	1	0.0800	<0.000509	18	10 - 66.5	2	20
2-Chlorophenol	0.0359	mg/L	1	0.0800	<0.000537	45	11.2 - 108	1	20
1,4-Dichlorobenzene (para)	0.0337	mg/L	1	0.0800	<0.000440	42	16 - 101	1	20
N-Nitrosodi-n-propylamine	0.0459	mg/L	1	0.0800	<0.000732	57	10 - 142	2	20
1,2,4-Trichlorobenzene	0.0347	mg/L	1	0.0800	<0.000404	43	18 - 118	2	20
Naphthalene	0.0369	mg/L	1	0.0800	<0.000489	46	20.2 - 114	0	20
4-Chloro-3-methylphenol	0.0541	mg/L	1	0.0800	<0.000522	68	21.5 - 125	0	20
Acenaphthylene	0.0459	mg/L	1	0.0800	<0.000586	57	25.8 - 121	1	20
Acenaphthene	0.0457	mg/L	1	0.0800	<0.000423	57	33.5 - 122	1	20
4-Nitrophenol	0.0203	mg/L	1	0.0800	<0.00185	25	10 - 125	0	20
2,4-Dinitrotoluene	0.0536	mg/L	1	0.0800	<0.000911	67	53 - 130	3	20
Fluorene	0.0496	mg/L	1	0.0800	<0.000648	62	44.6 - 117	1	20
Pentachlorophenol	0.0161	mg/L	1	0.0800	<0.000435	20	10 - 139	8	20
Anthracene	0.0491	mg/L	1	0.0800	<0.000428	61	57.5 - 115	2	20
Phenanthrene	0.0514	mg/L	1	0.0800	<0.000548	64	55.5 - 118	2	20
Fluoranthene	0.0549	mg/L	1	0.0800	<0.000632	69	57 - 122	2	20

*continued . . .*

<sup>4</sup>Spike analyte out of control limits. Results biased low. ●

<sup>5</sup>Spike analyte out of control limits. Results biased low. ●

<sup>6</sup>Spike analyte out of control limits. Results biased low. ●



*control spikes continued . . .*

Param		LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Pyrene		0.0463	mg/L	1	0.0800	<0.000723	58	58.5 - 130	2	20
Benzo(a)anthracene	<sup>7</sup>	0.0476	mg/L	1	0.0800	<0.000527	60	63.4 - 109	2	20
Chrysene		0.0502	mg/L	1	0.0800	<0.000638	63	54.7 - 114	2	20
Benzo(b)fluoranthene	<sup>8</sup>	0.0558	mg/L	1	0.0800	<0.000879	70	64.8 - 120	25	20
Benzo(k)fluoranthene		0.0692	mg/L	1	0.0800	<0.000845	86	70.3 - 114	2	20
Benzo(a)pyrene		0.0604	mg/L	1	0.0800	<0.00167	76	63.7 - 120	1	20
Indeno(1,2,3-cd)pyrene		0.0591	mg/L	1	0.0800	<0.000862	74	65.4 - 119	1	20
Dibenzo(a,h)anthracene		0.0616	mg/L	1	0.0800	<0.000809	77	68.7 - 117	3	20
Benzo(g,h,i)perylene		0.0630	mg/L	1	0.0800	<0.000949	79	57.2 - 125	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
2-Fluorophenol	0.0285	0.0283	mg/L	1	0.0800	36	35	10 - 53.1
Phenol-d5	0.0192	0.0195	mg/L	1	0.0800	24	24	10 - 36.9
Nitrobenzene-d5	0.0465	0.0464	mg/L	1	0.0800	58	58	23.8 - 108
2-Fluorobiphenyl	0.0489	0.0486	mg/L	1	0.0800	61	61	15.9 - 127
2,4,6-Tribromophenol	0.0799	0.0799	mg/L	1	0.0800	100	100	10 - 123
Terphenyl-d14	0.0635	0.0653	mg/L	1	0.0800	79	82	17.2 - 160

**Laboratory Control Spike (LCS-1)**

QC Batch: 63411  
Prep Batch: 54129

Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-08

Analyzed By: MD  
Prepared By: MD

Param		LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Oil and Grease	<sup>9</sup>	18.3	mg/L	1	40.0	<3.60	46	78 - 114

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param		LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Oil and Grease	<sup>10</sup>	17.4	mg/L	1	40.0	<3.60	44	78 - 114	5	18

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Laboratory Control Spike (LCS-1)**

QC Batch: 63425  
Prep Batch: 54137

Date Analyzed: 2009-09-10  
QC Preparation: 2009-09-04

Analyzed By: DS  
Prepared By: DS

<sup>7</sup>Spike analyte out of control limits. Results biased low. ●

<sup>8</sup>RPD outside RPD limits.

<sup>9</sup>SPECIAL: Sodium Sulfate may have caused low LCS, LCS, and MS recovery. Results may be biased low. ●

<sup>10</sup>SPECIAL: Sodium Sulfate may have caused low LCS, LCS, and MS recovery. Samples may be biased low. ●

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
HMX	2.41	µg/L	1	2.50	<0.123	96	63.5 - 125
RDX	2.37	µg/L	1	2.50	<0.298	95	74.5 - 124
1,3,5-Trinitrobenzene	2.38	µg/L	1	2.50	<0.339	95	54.1 - 131
1,3-Dinitrobenzene	2.45	µg/L	1	2.50	<0.389	98	72 - 112
Nitrobenzene	2.50	µg/L	1	2.50	<0.379	100	72.5 - 126
Tetryl	2.31	µg/L	1	2.50	<0.413	92	35.9 - 149
TNT	2.37	µg/L	1	2.50	<0.464	95	40.7 - 129
4-Amino-DNT	2.31	µg/L	1	2.50	<0.319	92	80 - 120
2-Amino-DNT	2.51	µg/L	1	2.50	<0.391	100	80 - 120
2,6-DNT	2.19	µg/L	1	2.50	<0.323	88	80 - 120
2,4-DNT	2.52	µg/L	1	2.50	<0.366	101	80 - 120
2-NT	2.47	µg/L	1	2.50	<0.379	99	49.8 - 139
4-NT	2.07	µg/L	1	2.50	<0.398	83	56.3 - 141
3-NT	2.37	µg/L	1	2.50	<0.346	95	66.2 - 129

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
HMX	2.43	µg/L	1	2.50	<0.123	97	63.5 - 125	1	20
RDX	2.33	µg/L	1	2.50	<0.298	93	74.5 - 124	2	20
1,3,5-Trinitrobenzene	2.38	µg/L	1	2.50	<0.339	95	54.1 - 131	0	20
1,3-Dinitrobenzene	2.41	µg/L	1	2.50	<0.389	96	72 - 112	2	20
Nitrobenzene	2.46	µg/L	1	2.50	<0.379	98	72.5 - 126	2	20
Tetryl	2.26	µg/L	1	2.50	<0.413	90	35.9 - 149	2	20
TNT	2.33	µg/L	1	2.50	<0.464	93	40.7 - 129	2	20
4-Amino-DNT	2.37	µg/L	1	2.50	<0.319	95	80 - 120	3	20
2-Amino-DNT	2.64	µg/L	1	2.50	<0.391	106	80 - 120	5	20
2,6-DNT	2.29	µg/L	1	2.50	<0.323	92	80 - 120	4	20
2,4-DNT	2.60	µg/L	1	2.50	<0.366	104	80 - 120	3	20
2-NT	2.34	µg/L	1	2.50	<0.379	94	49.8 - 139	5	20
4-NT	2.26	µg/L	1	2.50	<0.398	90	56.3 - 141	9	20
3-NT	2.43	µg/L	1	2.50	<0.346	97	66.2 - 129	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
1,2-Dinitrobenzene	2.29	2.15	µg/L	1	2.50	92	86	53 - 134

#### Laboratory Control Spike (LCS-1)

QC Batch: 63462  
Prep Batch: 54154

Date Analyzed: 2009-09-11  
QC Preparation: 2009-09-11

Analyzed By: RR  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Chromium	0.100	mg/L	1	0.100	<0.000583	100	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Chromium	0.101	mg/L	1	0.100	<0.000583	101	85 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63545  
Prep Batch: 54079

Date Analyzed: 2009-09-15  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Calcium	54.9	mg/L	1	50.0	<0.117	110	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Calcium	53.0	mg/L	1	50.0	<0.117	106	85 - 115	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63545  
Prep Batch: 54079

Date Analyzed: 2009-09-15  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Potassium	54.0	mg/L	1	50.0	<0.172	108	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Potassium	52.1	mg/L	1	50.0	<0.172	104	85 - 115	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63545  
Prep Batch: 54079

Date Analyzed: 2009-09-15  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Magnesium	52.3	mg/L	1	50.0	<0.160	105	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Magnesium	50.1	mg/L	1	50.0	<0.160	100	85 - 115	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63545  
Prep Batch: 54079

Date Analyzed: 2009-09-15  
QC Preparation: 2009-09-09

Analyzed By: JR  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Sodium	55.4	mg/L	1	50.0	<0.0500	111	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Sodium	52.9	mg/L	1	50.0	<0.0500	106	85 - 115	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63674  
Prep Batch: 54363

Date Analyzed: 2009-09-16  
QC Preparation: 2009-09-16

Analyzed By: JR  
Prepared By: JR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Fluoride	4.90	mg/L	1	5.00	<0.0434	98	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Fluoride	4.89	mg/L	1	5.00	<0.0434	98	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63677  
Prep Batch: 54366

Date Analyzed: 2009-09-03  
QC Preparation: 2009-09-03

Analyzed By: JR  
Prepared By: JR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromide	4.85	mg/L	1	5.00	<0.0394	97	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromide	4.83	mg/L	1	5.00	<0.0394	97	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63677  
Prep Batch: 54366

Date Analyzed: 2009-09-03  
QC Preparation: 2009-09-03

Analyzed By: JR  
Prepared By: JR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	24.6	mg/L	1	25.0	<0.640	98	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	24.5	mg/L	1	25.0	<0.640	98	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63677  
Prep Batch: 54366

Date Analyzed: 2009-09-03  
QC Preparation: 2009-09-03

Analyzed By: JR  
Prepared By: JR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate	24.2	mg/L	1	25.0	<0.504	97	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate	24.1	mg/L	1	25.0	<0.504	96	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63678  
Prep Batch: 54367

Date Analyzed: 2009-09-17  
QC Preparation: 2009-09-17

Analyzed By: KV  
Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Organic Carbon	52.5	mg/L	1	50.0	<0.401	105	89.5 - 114

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Organic Carbon	52.5	mg/L	1	50.0	<0.401	105	89.5 - 114	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Matrix Spike (MS-1) Spiked Sample: 209098

QC Batch: 63239 Date Analyzed: 2009-09-03 Analyzed By: ER  
Prep Batch: 53976 QC Preparation: 2009-09-03 Prepared By: ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	1.11	mg/L	1	1.00	<0.152	111	48.4 - 136

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	<sup>11</sup> 0.768	mg/L	1	1.00	<0.152	77	48.4 - 136	36	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	<sup>12</sup> 0.112	0.0584	mg/L	1	0.1	112	58	70.3 - 129
4-Bromofluorobenzene (4-BFB)	<sup>13</sup> 0.111	0.0576	mg/L	1	0.1	111	58	82.5 - 118

#### Matrix Spike (MS-1) Spiked Sample: 209098

QC Batch: 63280 Date Analyzed: 2009-09-04 Analyzed By: TP  
Prep Batch: 54009 QC Preparation: 2009-09-04 Prepared By: TP

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Mercury	0.000980	mg/L	1	0.00100	<0.0000329	98	80 - 116

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Mercury	0.000970	mg/L	1	0.00100	<0.0000329	97	80 - 116	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Matrix Spike (MS-1) Spiked Sample: 208666

QC Batch: 63307 Date Analyzed: 2009-09-07 Analyzed By: AW  
Prep Batch: 54035 QC Preparation: 2009-09-04 Prepared By: AW

<sup>11</sup>MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.

<sup>12</sup>Matrix spike recovery out of control limits. Use LCS/LCSD to demonstrate analysis is under control.

<sup>13</sup>Matrix spike recovery out of control limits. Use LCS/LCSD to demonstrate analysis is under control.

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	24.3	mg/L	1	25.0	<0.876	97	54 - 144

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	23.5	mg/L	1	25.0	<0.876	94	54 - 144	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Triacontane	10.9	10.9	mg/L	1	10	109	109	57.3 - 151

#### Matrix Spike (MS-1) Spiked Sample: 209099

QC Batch: 63330 Date Analyzed: 2009-09-02 Analyzed By: MD  
Prep Batch: 54057 QC Preparation: 2009-09-02 Prepared By: MD

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Hexavalent Chromium	0.560	mg/L	1.11	0.556	<0.00659	101	80.1 - 118

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Hexavalent Chromium	0.566	mg/L	1.11	0.556	<0.00659	102	80.1 - 118	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Matrix Spike (MS-1) Spiked Sample: 209099

QC Batch: 63370 Date Analyzed: 2009-09-05 Analyzed By: AH  
Prep Batch: 54092 QC Preparation: 2009-09-05 Prepared By: AH

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Ammonia-N	5.38	mg/L	1	5.00	0.504	98	57.2 - 133

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Ammonia-N	5.26	mg/L	1	5.00	0.504	95	57.2 - 133	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209096QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Silver	0.120	mg/L	1	0.125	<0.00111	96	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Silver	0.118	mg/L	1	0.125	<0.00111	94	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209096QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Aluminum	1.26	mg/L	1	1.00	0.151	111	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Aluminum	1.24	mg/L	1	1.00	0.151	109	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209096QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Arsenic	0.509	mg/L	1	0.500	0.061	90	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Arsenic	0.500	mg/L	1	0.500	0.061	88	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.



**Matrix Spike (MS-1)** Spiked Sample: 209096QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Barium	0.835	mg/L	1	1.00	0.012	82	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Barium	0.816	mg/L	1	1.00	0.012	80	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209096QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Beryllium	0.0210	mg/L	1	0.0250	<0.000450	84	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Beryllium	0.0210	mg/L	1	0.0250	<0.000450	84	75 - 125	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209096QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Cadmium	0.213	mg/L	1	0.250	<0.000303	85	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Cadmium	0.199	mg/L	1	0.250	<0.000303	80	75 - 125	7	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209096QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Cobalt	0.200	mg/L	1	0.250	<0.000822	80	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Cobalt	0.197	mg/L	1	0.250	<0.000822	79	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209096QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Chromium	0.0810	mg/L	1	0.100	<0.000583	81	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Chromium	0.0790	mg/L	1	0.100	<0.000583	79	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209096QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Copper	0.118	mg/L	1	0.125	<0.000843	94	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Copper	0.117	mg/L	1	0.125	<0.000843	94	75 - 125	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209096QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Iron	1.42	mg/L	1	0.500	1.01	82	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Iron	1.43	mg/L	1	0.500	1.01	84	75 - 125	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209096QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Manganese	0.452	mg/L	1	0.250	0.257	78	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Manganese	0.451	mg/L	1	0.250	0.257	78	75 - 125	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209096QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Molybdenum	0.472	mg/L	1	0.500	0.036	87	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Molybdenum	0.463	mg/L	1	0.500	0.036	85	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209096QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Nickel	0.207	mg/L	1	0.250	0.013	78	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Nickel	0.212	mg/L	1	0.250	0.013	80	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209096QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Phosphorous	0.496	mg/L	1	0.500	0.058	88	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Phosphorous	0.486	mg/L	1	0.500	0.058	86	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209096QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Lead	0.464	mg/L	1	0.500	<0.00326	93	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Lead	0.453	mg/L	1	0.500	<0.00326	91	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209096QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Antimony	0.235	mg/L	1	0.250	<0.00440	94	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Antimony	0.220	mg/L	1	0.250	<0.00440	88	75 - 125	7	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209096QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Selenium	0.423	mg/L	1	0.500	<0.00508	85	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Selenium	0.428	mg/L	1	0.500	<0.00508	86	75 - 125	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209096QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Thallium	0.389	mg/L	1	0.500	<0.00488	78	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Thallium	0.385	mg/L	1	0.500	<0.00488	77	75 - 125	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209096QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Vanadium	0.223	mg/L	1	0.250	0.013	84	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Vanadium	0.213	mg/L	1	0.250	0.013	80	75 - 125	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209096QC Batch: 63374  
Prep Batch: 54079Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Zinc	0.201	mg/L	1	0.250	<0.000465	80	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Zinc	0.220	mg/L	1	0.250	<0.000465	88	75 - 125	9	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209099QC Batch: 63391  
Prep Batch: 54106Date Analyzed: 2009-09-07  
QC Preparation: 2009-09-07Analyzed By: AH  
Prepared By: AH

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Cyanide	0.121	mg/L	1	0.120	<0.0110	101	62.6 - 132

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Cyanide	0.125	mg/L	1	0.120	<0.0110	104	62.6 - 132	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209098QC Batch: 63393  
Prep Batch: 54112Date Analyzed: 2009-09-10  
QC Preparation: 2009-09-08Analyzed By: MN  
Prepared By: MN

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Phenol	0.0145	mg/L	0.922	0.0800	<0.000469	18	10 - 66.5
2-Chlorophenol	0.0347	mg/L	0.922	0.0800	<0.000495	43	11.2 - 108
1,4-Dichlorobenzene (para)	0.0324	mg/L	0.922	0.0800	<0.000406	40	16 - 101
N-Nitrosodi-n-propylamine	0.0430	mg/L	0.922	0.0800	<0.000675	54	10 - 142
1,2,4-Trichlorobenzene	0.0340	mg/L	0.922	0.0800	<0.000372	42	18 - 108
Naphthalene	0.0347	mg/L	0.922	0.0800	<0.000451	43	20.2 - 114
4-Chloro-3-methylphenol	0.0474	mg/L	0.922	0.0800	<0.000481	59	21.5 - 125
Acenaphthylene	0.0423	mg/L	0.922	0.0800	<0.000540	53	25.8 - 121
Acenaphthene	0.0413	mg/L	0.922	0.0800	<0.000390	52	33.5 - 122
4-Nitrophenol	0.0130	mg/L	0.922	0.0800	<0.00170	16	10 - 125
2,4-Dinitrotoluene	0.0476	mg/L	0.922	0.0800	<0.000840	60	53 - 130
Fluorene	0.0445	mg/L	0.922	0.0800	<0.000597	56	44.6 - 117
Pentachlorophenol	0.0163	mg/L	0.922	0.0800	<0.000401	20	10 - 139
Anthracene	0.0422	mg/L	0.922	0.0800	<0.000395	53	57.5 - 115
Phenanthrene	0.0444	mg/L	0.922	0.0800	<0.000505	56	55.5 - 118
Fluoranthene	0.0471	mg/L	0.922	0.0800	<0.000583	59	57 - 122
Pyrene	0.0399	mg/L	0.922	0.0800	<0.000667	50	58.5 - 130
Benzo(a)anthracene	0.0403	mg/L	0.922	0.0800	<0.000486	50	63.4 - 109
Chrysene	0.0426	mg/L	0.922	0.0800	<0.000588	53	54.7 - 114
Benzo(b)fluoranthene	0.0375	mg/L	0.922	0.0800	<0.000810	47	64.8 - 120
Benzo(k)fluoranthene	0.0599	mg/L	0.922	0.0800	<0.000779	75	70.3 - 114
Benzo(a)pyrene	0.0522	mg/L	0.922	0.0800	<0.00154	65	63.7 - 120
Indeno(1,2,3-cd)pyrene	0.0509	mg/L	0.922	0.0800	<0.000795	64	65.4 - 119
Dibenzo(a,h)anthracene	0.0514	mg/L	0.922	0.0800	<0.000746	64	68.7 - 117
Benzo(g,h,i)perylene	0.0521	mg/L	0.922	0.0800	<0.000875	65	57.2 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Phenol	0.0149	mg/L	0.922	0.0800	<0.000469	19	10 - 66.5	3	20
2-Chlorophenol	0.0351	mg/L	0.922	0.0800	<0.000495	44	11.2 - 108	1	20
1,4-Dichlorobenzene (para)	0.0332	mg/L	0.922	0.0800	<0.000406	42	16 - 101	2	20
N-Nitrosodi-n-propylamine	0.0438	mg/L	0.922	0.0800	<0.000675	55	10 - 142	2	20
1,2,4-Trichlorobenzene	0.0337	mg/L	0.922	0.0800	<0.000372	42	18 - 108	1	20
Naphthalene	0.0349	mg/L	0.922	0.0800	<0.000451	44	20.2 - 114	1	20
4-Chloro-3-methylphenol	0.0481	mg/L	0.922	0.0800	<0.000481	60	21.5 - 125	2	20

*continued . . .*<sup>14</sup>Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.<sup>15</sup>Matrix spike recovery out of control limits due to matrix interference. Result biased low.<sup>16</sup>Matrix spike recovery out of control limits due to matrix interference. Result biased low.<sup>17</sup>Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.<sup>18</sup>Matrix spike recovery out of control limits due to matrix interference. Result biased low.<sup>19</sup>Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.<sup>20</sup>Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

*matrix spikes continued . . .*

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Acenaphthylene	0.0432	mg/L	0.922	0.0800	<0.000540	54	25.8 - 121	2	20
Acenaphthene	0.0426	mg/L	0.922	0.0800	<0.000390	53	33.5 - 122	3	20
4-Nitrophenol	0.0128	mg/L	0.922	0.0800	<0.00170	16	10 - 125	2	20
2,4-Dinitrotoluene	0.0486	mg/L	0.922	0.0800	<0.000840	61	53 - 130	2	20
Fluorene	0.0454	mg/L	0.922	0.0800	<0.000597	57	44.6 - 117	2	20
Pentachlorophenol	0.0192	mg/L	0.922	0.0800	<0.000401	24	10 - 139	16	20
Anthracene	0.0439	mg/L	0.922	0.0800	<0.000395	55	57.5 - 115	4	20
Phenanthrene	0.0449	mg/L	0.922	0.0800	<0.000505	56	55.5 - 118	1	20
Fluoranthene	0.0483	mg/L	0.922	0.0800	<0.000583	60	57 - 122	2	20
Pyrene	0.0408	mg/L	0.922	0.0800	<0.000667	51	58.5 - 130	2	20
Benzo(a)anthracene	0.0407	mg/L	0.922	0.0800	<0.000486	51	63.4 - 109	1	20
Chrysene	0.0433	mg/L	0.922	0.0800	<0.000588	54	54.7 - 114	2	20
Benzo(b)fluoranthene	0.0454	mg/L	0.922	0.0800	<0.000810	57	64.8 - 120	19	20
Benzo(k)fluoranthene	0.0564	mg/L	0.922	0.0800	<0.000779	70	70.3 - 114	6	20
Benzo(a)pyrene	0.0521	mg/L	0.922	0.0800	<0.00154	65	63.7 - 120	0	20
Indeno(1,2,3-cd)pyrene	0.0532	mg/L	0.922	0.0800	<0.000795	66	65.4 - 119	4	20
Dibenzo(a,h)anthracene	0.0537	mg/L	0.922	0.0800	<0.000746	67	68.7 - 117	4	20
Benzo(g,h,i)perylene	0.0536	mg/L	0.922	0.0800	<0.000875	67	57.2 - 125	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
2-Fluorophenol	0.0250	0.0247	mg/L	0.922	0.08	31	31	10 - 53.1
Phenol-d5	0.0159	0.0155	mg/L	0.922	0.08	20	19	10 - 36.9
Nitrobenzene-d5	0.0419	0.0422	mg/L	0.922	0.08	52	53	23.8 - 108
2-Fluorobiphenyl	0.0443	0.0451	mg/L	0.922	0.08	55	56	15.9 - 127
2,4,6-Tribromophenol	0.0585	0.0595	mg/L	0.922	0.08	73	74	10 - 123
Terphenyl-d14	0.0458	0.0475	mg/L	0.922	0.08	57	59	17.2 - 160

**Matrix Spike (MS-1)** Spiked Sample: 209098

QC Batch: 63425

Date Analyzed: 2009-09-10

Analyzed By: DS

Prep Batch: 54137

QC Preparation: 2009-09-04

Prepared By: DS

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
HMX	1.41	µg/L	1	2.50	<0.123	56	10 - 164
RDX	1.63	µg/L	1	2.50	<0.298	65	10 - 147
1,3,5-Trinitrobenzene	1.76	µg/L	1	2.50	<0.339	70	10 - 187

*continued . . .*<sup>21</sup> Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.<sup>22</sup> Matrix spike recovery out of control limits due to matrix interference. Result biased low.<sup>23</sup> Matrix spike recovery out of control limits due to matrix interference. Result biased low.<sup>24</sup> Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.<sup>25</sup> Matrix spike recovery out of control limits due to matrix interference. Result biased low.<sup>26</sup> Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.<sup>27</sup> Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.



*matrix spikes continued . . .*

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
1,3-Dinitrobenzene	1.87	µg/L	1	2.50	<0.389	75	10 - 155
Nitrobenzene	1.87	µg/L	1	2.50	<0.379	75	10 - 156
Tetryl	1.80	µg/L	1	2.50	<0.413	72	10 - 158
TNT	1.93	µg/L	1	2.50	<0.464	77	21 - 114
4-Amino-DNT	2.19	µg/L	1	2.50	<0.319	88	80 - 120
2-Amino-DNT	<sup>28</sup> 1.96	µg/L	1	2.50	<0.391	78	80 - 120
2,6-DNT	<sup>29</sup> 1.64	µg/L	1	2.50	<0.323	66	80 - 120
2,4-DNT	<sup>30</sup> 1.96	µg/L	1	2.50	<0.366	78	80 - 120
2-NT	1.99	µg/L	1	2.50	<0.379	80	10 - 147
4-NT	1.81	µg/L	1	2.50	<0.398	72	10 - 161
3-NT	2.08	µg/L	1	2.50	<0.346	83	10 - 167

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
HMX	1.56	µg/L	1	2.50	<0.123	62	10 - 164	10	20
RDX	1.68	µg/L	1	2.50	<0.298	67	10 - 147	3	20
1,3,5-Trinitrobenzene	1.95	µg/L	1	2.50	<0.339	78	10 - 187	10	20
1,3-Dinitrobenzene	1.94	µg/L	1	2.50	<0.389	78	10 - 155	4	20
Nitrobenzene	2.03	µg/L	1	2.50	<0.379	81	10 - 156	8	20
Tetryl	2.02	µg/L	1	2.50	<0.413	81	10 - 158	12	20
TNT	1.89	µg/L	1	2.50	<0.464	76	21 - 114	2	20
4-Amino-DNT	2.40	µg/L	1	2.50	<0.319	96	80 - 120	9	20
2-Amino-DNT	2.26	µg/L	1	2.50	<0.391	90	80 - 120	14	20
2,6-DNT	<sup>31</sup> 1.90	µg/L	1	2.50	<0.323	76	80 - 120	15	20
2,4-DNT	2.09	µg/L	1	2.50	<0.366	84	80 - 120	6	20
2-NT	1.97	µg/L	1	2.50	<0.379	79	10 - 147	1	20
4-NT	1.92	µg/L	1	2.50	<0.398	77	10 - 161	6	20
3-NT	1.92	µg/L	1	2.50	<0.346	77	10 - 167	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
1,2-Dinitrobenzene	3.49	3.68	µg/L	1	2.5	140	147	10 - 222

**Matrix Spike (MS-1)**      Spiked Sample: 209230QC Batch: 63441  
Prep Batch: 54150Date Analyzed: 2009-09-09  
QC Preparation: 2009-09-09Analyzed By: AH  
Prepared By: AH<sup>28</sup> Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.<sup>29</sup> Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.<sup>30</sup> Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.<sup>31</sup> Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Kjeldahl Nitrogen - N	44.5	mg/L	1	50.0	2.52	84	61.2 - 118

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Kjeldahl Nitrogen - N	46.2	mg/L	1	50.0	2.52	87	61.2 - 118	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Matrix Spike (MS-1) Spiked Sample: 209097

QC Batch: 63462  
Prep Batch: 54154

Date Analyzed: 2009-09-11  
QC Preparation: 2009-09-11

Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Chromium	0.0990	mg/L	1	0.100	0.003	96	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Chromium	0.0990	mg/L	1	0.100	0.003	96	75 - 125	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Matrix Spike (MS-1) Spiked Sample: 209096

QC Batch: 63545  
Prep Batch: 54079

Date Analyzed: 2009-09-15  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Calcium	269	mg/L	10	50.0	212	114	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Calcium	264	mg/L	10	50.0	212	104	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Matrix Spike (MS-1) Spiked Sample: 209096

QC Batch: 63545  
Prep Batch: 54079

Date Analyzed: 2009-09-15  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Potassium	142	mg/L	1	50.0	94.5	95	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Potassium	152	mg/L	1	50.0	94.5	115	75 - 125	7	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Matrix Spike (MS-1) Spiked Sample: 209096

QC Batch: 63545  
Prep Batch: 54079

Date Analyzed: 2009-09-15  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Magnesium	594	mg/L	10	50.0	542	104	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Magnesium	602	mg/L	10	50.0	542	120	75 - 125	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Matrix Spike (MS-1) Spiked Sample: 209096

QC Batch: 63545  
Prep Batch: 54079

Date Analyzed: 2009-09-15  
QC Preparation: 2009-09-09

Analyzed By: RR  
Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Sodium	2500	mg/L	100	50.0	2450	100	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Sodium	2490	mg/L	100	50.0	2450	80	75 - 125	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Matrix Spike (MS-1) Spiked Sample: 208953

QC Batch: 63674  
Prep Batch: 54363

Date Analyzed: 2009-09-16  
QC Preparation: 2009-09-16

Analyzed By: JR  
Prepared By: JR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Fluoride	10900	mg/L	2222	11100	<96.4	98	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Fluoride	10900	mg/L	2222	11100	<96.4	98	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209098

QC Batch: 63677  
Prep Batch: 54366

Date Analyzed: 2009-09-03  
QC Preparation: 2009-09-03

Analyzed By: JR  
Prepared By: JR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromide	2670	mg/L	556	2780	<21.9	96	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromide	2670	mg/L	556	2780	<21.9	96	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209098

QC Batch: 63677  
Prep Batch: 54366

Date Analyzed: 2009-09-03  
QC Preparation: 2009-09-03

Analyzed By: JR  
Prepared By: JR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	16000	mg/L	556	13900	2200	99	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	15900	mg/L	556	13900	2200	98	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 209098

QC Batch: 63677  
Prep Batch: 54366

Date Analyzed: 2009-09-03  
QC Preparation: 2009-09-03

Analyzed By: JR  
Prepared By: JR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate	19700	mg/L	556	13900	5640	101	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate	19700	mg/L	556	13900	5640	101	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Matrix Spike (MS-1) Spiked Sample: 209098

QC Batch: 63678

Date Analyzed: 2009-09-17

Analyzed By: KV

Prep Batch: 54367

QC Preparation: 2009-09-17

Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Organic Carbon	49.1	mg/L	1	50.0	1.16	96	66.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Organic Carbon	49.3	mg/L	1	50.0	1.16	96	66.9 - 121	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Matrix Spike (MS-1) Spiked Sample: 209096

QC Batch: 63681

Date Analyzed: 2009-09-17

Analyzed By: KV

Prep Batch: 54370

QC Preparation: 2009-09-17

Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Nitrate and Nitrite as N	<sup>32</sup> 0.183	mg/L	2	0.200	0.124	30	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Nitrate and Nitrite as N	<sup>33</sup> 0.192	mg/L	2	0.200	0.124	34	80 - 120	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Standard (CCV-1)

QC Batch: 63239

Date Analyzed: 2009-09-03

Analyzed By: ER

<sup>32</sup>Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

<sup>33</sup>Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.07	107	80 - 120	2009-09-03

**Standard (CCV-2)**

QC Batch: 63239

Date Analyzed: 2009-09-03

Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.02	102	80 - 120	2009-09-03

**Standard (ICV-1)**

QC Batch: 63280

Date Analyzed: 2009-09-04

Analyzed By: TP

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/L	0.00100	0.00108	108	90 - 110	2009-09-04

**Standard (CCV-1)**

QC Batch: 63280

Date Analyzed: 2009-09-04

Analyzed By: TP

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/L	0.00100	0.00104	104	90 - 110	2009-09-04

**Standard (CCV-1)**

QC Batch: 63307

Date Analyzed: 2009-09-07

Analyzed By: AW

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/L	250	286	114	80 - 120	2009-09-07

**Standard (CCV-2)**

QC Batch: 63307

Date Analyzed: 2009-09-07

Analyzed By: AW

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/L	250	262	105	80 - 120	2009-09-07

**Standard (CCV-1)**

QC Batch: 63330

Date Analyzed: 2009-09-02

Analyzed By: MD

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hexavalent Chromium		mg/L	0.500	0.505	101	90 - 110	2009-09-02

**Standard (CCV-2)**

QC Batch: 63330

Date Analyzed: 2009-09-02

Analyzed By: MD

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hexavalent Chromium		mg/L	0.500	0.508	102	90 - 110	2009-09-02

**Standard (ICV-1)**

QC Batch: 63341

Date Analyzed: 2009-09-02

Analyzed By: JG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7.00	7.01	100	98 - 102	2009-09-02

**Standard (CCV-1)**

QC Batch: 63341

Date Analyzed: 2009-09-02

Analyzed By: JG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7.00	7.00	100	98 - 102	2009-09-02

**Standard (ICV-1)**

QC Batch: 63370

Date Analyzed: 2009-09-05

Analyzed By: AH

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Ammonia-N		mg/L	5.00	4.93	99	85 - 115	2009-09-05

**Standard (CCV-1)**

QC Batch: 63370

Date Analyzed: 2009-09-05

Analyzed By: AH

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Ammonia-N		mg/L	5.00	4.98	100	85 - 115	2009-09-05

**Standard (ICV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Silver		mg/L	0.250	0.254	102	90 - 110	2009-09-09

**Standard (ICV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Aluminum		mg/L	1.00	1.02	102	90 - 110	2009-09-09

**Standard (ICV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Arsenic		mg/L	2.00	2.02	101	90 - 110	2009-09-09

**Standard (ICV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR



Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Barium		mg/L	1.00	1.03	103	90 - 110	2009-09-09

**Standard (ICV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Beryllium		mg/L	1.00	1.01	101	90 - 110	2009-09-09

**Standard (ICV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Cadmium		mg/L	1.00	1.05	105	90 - 110	2009-09-09

**Standard (ICV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Cobalt		mg/L	1.00	0.994	99	90 - 110	2009-09-09

**Standard (ICV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Chromium		mg/L	1.00	1.04	104	90 - 110	2009-09-09

**Standard (ICV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Copper		mg/L	1.00	1.02	102	90 - 110	2009-09-09

**Standard (ICV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Iron		mg/L	1.00	1.04	104	90 - 110	2009-09-09

**Standard (ICV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Manganese		mg/L	1.00	0.999	100	90 - 110	2009-09-09

**Standard (ICV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Molybdenum		mg/L	1.00	1.01	101	90 - 110	2009-09-09

**Standard (ICV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Nickel		mg/L	1.00	1.00	100	90 - 110	2009-09-09

**Standard (ICV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Phosphorous		mg/L	5.00	4.97	99	90 - 110	2009-09-09

**Standard (ICV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Lead		mg/L	2.00	2.08	104	90 - 110	2009-09-09

**Standard (ICV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Antimony		mg/L	2.00	2.04	102	90 - 110	2009-09-09

**Standard (ICV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Selenium		mg/L	1.00	1.03	103	90 - 110	2009-09-09

**Standard (ICV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Thallium		mg/L	5.00	5.14	103	90 - 110	2009-09-09

**Standard (ICV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Vanadium		mg/L	1.00	1.05	105	90 - 110	2009-09-09

**Standard (ICV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Zinc		mg/L	1.00	1.02	102	90 - 110	2009-09-09

**Standard (CCV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Silver		mg/L	0.125	0.127	102	90 - 110	2009-09-09

**Standard (CCV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Aluminum		mg/L	1.00	0.993	99	90 - 110	2009-09-09

**Standard (CCV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Arsenic		mg/L	1.00	1.02	102	90 - 110	2009-09-09

**Standard (CCV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Barium		mg/L	1.00	1.02	102	90 - 110	2009-09-09

**Standard (CCV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Beryllium		mg/L	1.00	1.00	100	90 - 110	2009-09-09

**Standard (CCV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Cadmium		mg/L	1.00	1.04	104	90 - 110	2009-09-09

**Standard (CCV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Cobalt		mg/L	1.00	1.00	100	90 - 110	2009-09-09

**Standard (CCV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Chromium		mg/L	1.00	1.02	102	90 - 110	2009-09-09

**Standard (CCV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Copper		mg/L	1.00	1.00	100	90 - 110	2009-09-09

**Standard (CCV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Iron		mg/L	1.00	1.02	102	90 - 110	2009-09-09

**Standard (CCV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Manganese		mg/L	1.00	1.01	101	90 - 110	2009-09-09

**Standard (CCV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Molybdenum		mg/L	1.00	0.989	99	90 - 110	2009-09-09

**Standard (CCV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Nickel		mg/L	1.00	0.993	99	90 - 110	2009-09-09

**Standard (CCV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Phosphorous		mg/L	5.00	4.99	100	90 - 110	2009-09-09

**Standard (CCV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Lead		mg/L	1.00	1.01	101	90 - 110	2009-09-09

**Standard (CCV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Antimony		mg/L	1.00	0.997	100	90 - 110	2009-09-09

**Standard (CCV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Selenium		mg/L	1.00	1.01	101	90 - 110	2009-09-09

**Standard (CCV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Thallium		mg/L	1.00	1.02	102	90 - 110	2009-09-09

**Standard (CCV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Vanadium		mg/L	1.00	1.04	104	90 - 110	2009-09-09

**Standard (CCV-1)**

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Zinc		mg/L	1.00	1.02	102	90 - 110	2009-09-09

**Standard (ICV-1)**

QC Batch: 63391

Date Analyzed: 2009-09-07

Analyzed By: AH

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Cyanide		mg/L	0.120	0.118	98	85 - 115	2009-09-07

**Standard (CCV-1)**

QC Batch: 63391

Date Analyzed: 2009-09-07

Analyzed By: AH

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Cyanide		mg/L	0.120	0.124	103	85 - 115	2009-09-07

**Standard (CCV-1)**

QC Batch: 63393

Date Analyzed: 2009-09-10

Analyzed By: MN

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Phenol		mg/L	60.0	58.5	98	80 - 120	2009-09-10
1,4-Dichlorobenzene (para)		mg/L	60.0	58.3	97	80 - 120	2009-09-10
2-Nitrophenol		mg/L	60.0	65.7	110	80 - 120	2009-09-10
2,4-Dichlorophenol		mg/L	60.0	66.0	110	80 - 120	2009-09-10
Hexachlorobutadiene		mg/L	60.0	58.3	97	80 - 120	2009-09-10
4-Chloro-3-methylphenol		mg/L	60.0	70.2	117	80 - 120	2009-09-10
2,4,6-Trichlorophenol		mg/L	60.0	65.3	109	80 - 120	2009-09-10
Acenaphthene		mg/L	60.0	61.1	102	80 - 120	2009-09-10
Diphenylamine		mg/L	60.0	60.0	100	80 - 120	2009-09-10

*continued ...*



*standard continued ...*

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Pentachlorophenol		mg/L	60.0	60.2	100	80 - 120	2009-09-10
Fluoranthene		mg/L	60.0	60.4	101	80 - 120	2009-09-10
Di-n-octylphthalate		mg/L	60.0	68.3	114	80 - 120	2009-09-10
Benzo(a)pyrene		mg/L	60.0	62.5	104	80 - 120	2009-09-10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limit
2-Fluorophenol		62.4	mg/L	1	60.0	104	80 - 120
Phenol-d5		59.8	mg/L	1	60.0	100	80 - 120
Nitrobenzene-d5		60.5	mg/L	1	60.0	101	80 - 120
2-Fluorobiphenyl		59.6	mg/L	1	60.0	99	80 - 120
2,4,6-Tribromophenol		69.8	mg/L	1	60.0	116	80 - 120
Terphenyl-d14		57.4	mg/L	1	60.0	96	80 - 120

**Standard (CCV-2)**

QC Batch: 63393

Date Analyzed: 2009-09-10

Analyzed By: MN

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Phenol		mg/L	60.0	54.6	91	80 - 120	2009-09-10
1,4-Dichlorobenzene (para)		mg/L	60.0	59.5	99	80 - 120	2009-09-10
2-Nitrophenol		mg/L	60.0	63.9	106	80 - 120	2009-09-10
2,4-Dichlorophenol		mg/L	60.0	63.6	106	80 - 120	2009-09-10
Hexachlorobutadiene		mg/L	60.0	58.7	98	80 - 120	2009-09-10
4-Chloro-3-methylphenol		mg/L	60.0	68.9	115	80 - 120	2009-09-10
2,4,6-Trichlorophenol		mg/L	60.0	59.6	99	80 - 120	2009-09-10
Acenaphthene		mg/L	60.0	60.2	100	80 - 120	2009-09-10
Diphenylamine		mg/L	60.0	59.3	99	80 - 120	2009-09-10
Pentachlorophenol	34	mg/L	60.0	41.9	70	80 - 120	2009-09-10
Fluoranthene		mg/L	60.0	59.8	100	80 - 120	2009-09-10
Di-n-octylphthalate		mg/L	60.0	69.6	116	80 - 120	2009-09-10
Benzo(a)pyrene		mg/L	60.0	67.8	113	80 - 120	2009-09-10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limit
2-Fluorophenol		61.1	mg/L	1	60.0	102	80 - 120
Phenol-d5		57.9	mg/L	1	60.0	96	80 - 120
Nitrobenzene-d5		60.5	mg/L	1	60.0	101	80 - 120
2-Fluorobiphenyl		58.9	mg/L	1	60.0	98	80 - 120
2,4,6-Tribromophenol		70.2	mg/L	1	60.0	117	80 - 120
Terphenyl-d14		56.4	mg/L	1	60.0	94	80 - 120

<sup>34</sup>Control analyte out of CCV control limits. Result biased low.

**Standard (ICV-1)**

QC Batch: 63425

Date Analyzed: 2009-09-10

Analyzed By: DS

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
HMX		µg/L	500	505	101	85 - 115	2009-09-10
RDX		µg/L	500	478	96	85 - 115	2009-09-10
1,3,5-Trinitrobenzene		µg/L	500	490	98	85 - 115	2009-09-10
1,3-Dinitrobenzene		µg/L	500	507	101	85 - 115	2009-09-10
Nitrobenzene		µg/L	500	507	101	85 - 115	2009-09-10
Tetryl		µg/L	500	485	97	85 - 115	2009-09-10
TNT		µg/L	500	481	96	85 - 115	2009-09-10
4-Amino-DNT		µg/L	500	518	104	85 - 115	2009-09-10
2-Amino-DNT		µg/L	500	540	108	85 - 115	2009-09-10
2,6-DNT		µg/L	500	466	93	85 - 115	2009-09-10
2,4-DNT		µg/L	500	520	104	85 - 115	2009-09-10
2-NT		µg/L	500	503	101	85 - 115	2009-09-10
4-NT		µg/L	500	433	87	85 - 115	2009-09-10
3-NT		µg/L	500	493	99	85 - 115	2009-09-10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limit
1,2-Dinitrobenzene		456	µg/L	1	500	91	85 - 115

**Standard (CCV-1)**

QC Batch: 63425

Date Analyzed: 2009-09-10

Analyzed By: DS

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
HMX		µg/L	500	545	109	85 - 115	2009-09-10
RDX		µg/L	500	461	92	85 - 115	2009-09-10
1,3,5-Trinitrobenzene		µg/L	500	483	97	85 - 115	2009-09-10
1,3-Dinitrobenzene		µg/L	500	516	103	85 - 115	2009-09-10
Nitrobenzene		µg/L	500	511	102	85 - 115	2009-09-10
Tetryl		µg/L	500	467	93	85 - 115	2009-09-10
TNT		µg/L	500	486	97	85 - 115	2009-09-10
4-Amino-DNT		µg/L	500	538	108	85 - 115	2009-09-10
2-Amino-DNT		µg/L	500	551	110	85 - 115	2009-09-10
2,6-DNT		µg/L	500	502	100	85 - 115	2009-09-10
2,4-DNT		µg/L	500	552	110	85 - 115	2009-09-10
2-NT		µg/L	500	535	107	85 - 115	2009-09-10
4-NT		µg/L	500	500	100	85 - 115	2009-09-10
3-NT		µg/L	500	507	101	85 - 115	2009-09-10

*continued ...*

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*standard continued ...*

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limit
Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limit
1,2-Dinitrobenzene		491	µg/L	1	500	98	85 - 115

**Standard (ICV-1)**

QC Batch: 63441

Date Analyzed: 2009-09-09

Analyzed By: AH

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Kjeldahl Nitrogen - N		mg/L	5.00	5.21	104	85 - 115	2009-09-09

**Standard (CCV-1)**

QC Batch: 63441

Date Analyzed: 2009-09-09

Analyzed By: AH

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Kjeldahl Nitrogen - N		mg/L	5.00	4.93	99	85 - 115	2009-09-09

**Standard (ICV-1)**

QC Batch: 63462

Date Analyzed: 2009-09-11

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Chromium		mg/L	1.00	1.03	103	90 - 110	2009-09-11

**Standard (CCV-1)**

QC Batch: 63462

Date Analyzed: 2009-09-11

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Chromium		mg/L	1.00	1.02	102	90 - 110	2009-09-11

**Standard (ICV-1)**

QC Batch: 63473

Date Analyzed: 2009-09-03

Analyzed By: MD

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	994	99	90 - 110	2009-09-03

**Standard (CCV-1)**

QC Batch: 63473

Date Analyzed: 2009-09-03

Analyzed By: MD

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	989	99	90 - 110	2009-09-03

**Standard (ICV-1)**

QC Batch: 63527

Date Analyzed: 2009-09-10

Analyzed By: JG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0.00	<1.00		90 - 110	2009-09-10
Carbonate Alkalinity		mg/L as CaCo3	0.00	240		90 - 110	2009-09-10
Bicarbonate Alkalinity		mg/L as CaCo3	0.00	10.0		90 - 110	2009-09-10
Total Alkalinity		mg/L as CaCo3	250	250	100	90 - 110	2009-09-10

**Standard (CCV-1)**

QC Batch: 63527

Date Analyzed: 2009-09-10

Analyzed By: JG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0.00	<1.00		90 - 110	2009-09-10
Carbonate Alkalinity		mg/L as CaCo3	0.00	240		90 - 110	2009-09-10
Bicarbonate Alkalinity		mg/L as CaCo3	0.00	10.0		90 - 110	2009-09-10
Total Alkalinity		mg/L as CaCo3	250	250	100	90 - 110	2009-09-10

**Standard (ICV-1)**

QC Batch: 63545

Date Analyzed: 2009-09-15

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Calcium		mg/L	50.0	50.7	101	90 - 110	2009-09-15

**Standard (ICV-1)**

QC Batch: 63545

Date Analyzed: 2009-09-15

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Potassium		mg/L	50.0	51.7	103	90 - 110	2009-09-15

**Standard (ICV-1)**

QC Batch: 63545

Date Analyzed: 2009-09-15

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Magnesium		mg/L	50.0	52.4	105	90 - 110	2009-09-15

**Standard (ICV-1)**

QC Batch: 63545

Date Analyzed: 2009-09-15

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Sodium		mg/L	50.0	51.6	103	90 - 110	2009-09-15

**Standard (CCV-1)**

QC Batch: 63545

Date Analyzed: 2009-09-15

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Calcium		mg/L	50.0	48.9	98	90 - 110	2009-09-15

**Standard (CCV-1)**

QC Batch: 63545

Date Analyzed: 2009-09-15

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Potassium		mg/L	50.0	50.6	101	90 - 110	2009-09-15

**Standard (CCV-1)**

QC Batch: 63545

Date Analyzed: 2009-09-15

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Magnesium		mg/L	50.0	49.2	98	90 - 110	2009-09-15

**Standard (CCV-1)**

QC Batch: 63545

Date Analyzed: 2009-09-15

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Sodium		mg/L	50.0	50.2	100	90 - 110	2009-09-15

**Standard (CCV-1)**

QC Batch: 63674

Date Analyzed: 2009-09-16

Analyzed By: JR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Fluoride		mg/L	5.00	5.06	101	90 - 110	2009-09-16

**Standard (CCV-2)**

QC Batch: 63674

Date Analyzed: 2009-09-16

Analyzed By: JR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Fluoride		mg/L	5.00	5.16	103	90 - 110	2009-09-16

**Standard (CCV-1)**

QC Batch: 63677

Date Analyzed: 2009-09-03

Analyzed By: JR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromide		mg/L	5.00	4.54	91	90 - 110	2009-09-03

**Standard (CCV-1)**

QC Batch: 63677

Date Analyzed: 2009-09-03

Analyzed By: JR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	25.0	23.0	92	90 - 110	2009-09-03

**Standard (CCV-1)**

QC Batch: 63677

Date Analyzed: 2009-09-03

Analyzed By: JR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		mg/L	25.0	22.6	90	90 - 110	2009-09-03

**Standard (CCV-2)**

QC Batch: 63677

Date Analyzed: 2009-09-03

Analyzed By: JR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromide		mg/L	5.00	4.54	91	90 - 110	2009-09-03

**Standard (CCV-2)**

QC Batch: 63677

Date Analyzed: 2009-09-03

Analyzed By: JR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	25.0	22.9	92	90 - 110	2009-09-03

**Standard (CCV-2)**

QC Batch: 63677

Date Analyzed: 2009-09-03

Analyzed By: JR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		mg/L	25.0	22.5	90	90 - 110	2009-09-03

**Standard (CCV-1)**

QC Batch: 63678

Date Analyzed: 2009-09-17

Analyzed By: KV

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Organic Carbon		mg/L	50.0	51.5	103	80 - 120	2009-09-17

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**Standard (CCV-2)**

QC Batch: 63678

Date Analyzed: 2009-09-17

Analyzed By: KV

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Organic Carbon		mg/L	50.0	50.9	102	80 - 120	2009-09-17

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**Standard (ICV-1)**

QC Batch: 63681

Date Analyzed: 2009-09-17

Analyzed By: KV

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Nitrate and Nitrite as N		mg/L	0.200	0.205	102	85 - 115	2009-09-17

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**Standard (CCV-1)**

QC Batch: 63681

Date Analyzed: 2009-09-17

Analyzed By: KV

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Nitrate and Nitrite as N		mg/L	0.200	0.188	94	85 - 115	2009-09-17









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# CHAIN OF CUSTODY RECORD

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PROJECT NO.		PROJECT NAME		SAMPLER'S SIGNATURE		PROJECT INFORMATION		SAMPLER'S SIGNATURE		PROJECT NAME		SAMPLER'S SIGNATURE		
DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	ANALYSIS REQUESTED	RECEIVED BY (SIGNATURE)	RECEIVED BY (PRINTED NAME)	RECEIVED BY (SIGNATURE)	RECEIVED BY (PRINTED NAME)	RECEIVED BY (SIGNATURE)	RECEIVED BY (PRINTED NAME)	RECEIVED BY (SIGNATURE)	
9-1-09	1335	HLSF-0154-DR00-016-009	WATER	209098	18	<input checked="" type="checkbox"/> VOC <input checked="" type="checkbox"/> DRO <input checked="" type="checkbox"/> GRO <input checked="" type="checkbox"/> TOC <input checked="" type="checkbox"/> SVOC <input checked="" type="checkbox"/> Explosives <input checked="" type="checkbox"/> TRPH <input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Total Cyanide <input checked="" type="checkbox"/> Nutrients	 Brad Davis SHIPPING ID NO.	 Carol Fox (PRINTED NAME)	 Trace - Lok (PRINTED NAME)	 Carol Fox (COMPANY)	 Trace - Lok (TIMESTAMP)	 Carol Fox (TIMESTAMP)	 Trace - Lok (TIMESTAMP)	 Carol Fox (TIMESTAMP)

DISPERSED IN THE MIDDLE OF THE 19TH CENTURY

755 S. Telegraph St., F-201  
Las Cruces, NM 88011  
575-532-1526  
575-532-1591

## CHAIN OF CUSTODY RECORD

PAGE 2 OF 2

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## CHAIN OF CUSTODY RECORD

Figure 1. Schematic representation of the experimental design. The subjects were divided into two groups: the control group (C) and the experimental group (E). The control group (C) was divided into two subgroups: the control group (C) and the control group (C). The experimental group (E) was divided into two subgroups: the experimental group (E) and the experimental group (E). The control group (C) was divided into two subgroups: the control group (C) and the control group (C). The experimental group (E) was divided into two subgroups: the experimental group (E) and the experimental group (E).

[illegible]

# RECEIVED

[illegible]

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# CHAIN OF CUSTODY RECORD

[illegible]

# QUESTIONS

**THE UNIVERSITY OF CHICAGO**